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AUTHORITY
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MC REPORT 011

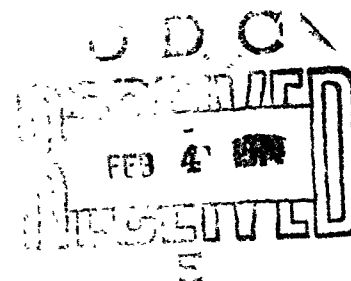
Volume 10

**ACOUSTIC ENVIRONMENTAL SCENARIOS
AND
PREDICTIONS FOR ASW**

**VOLUME 10
AREA 4A, WINTER
PREDICTIONS FOR PASSIVE SONAR**

October 1972

LONG RANGE ACOUSTIC PROPAGATION PROJECT



**OCEAN SCIENCE PROGRAM
MAURY CENTER FOR OCEAN SCIENCE
Department of the Navy
Washington, D.C.**

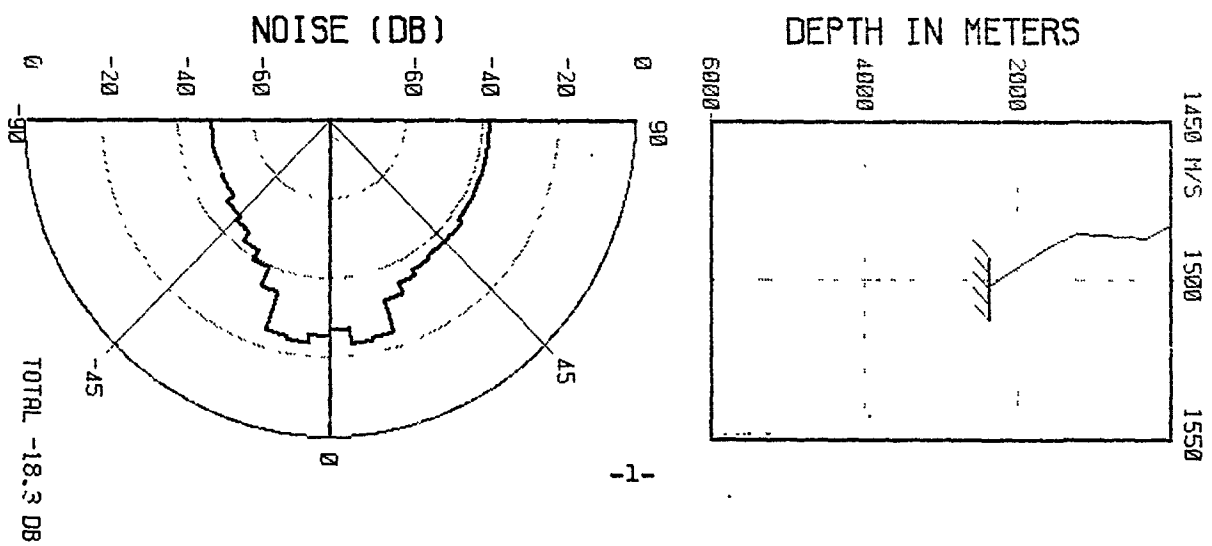
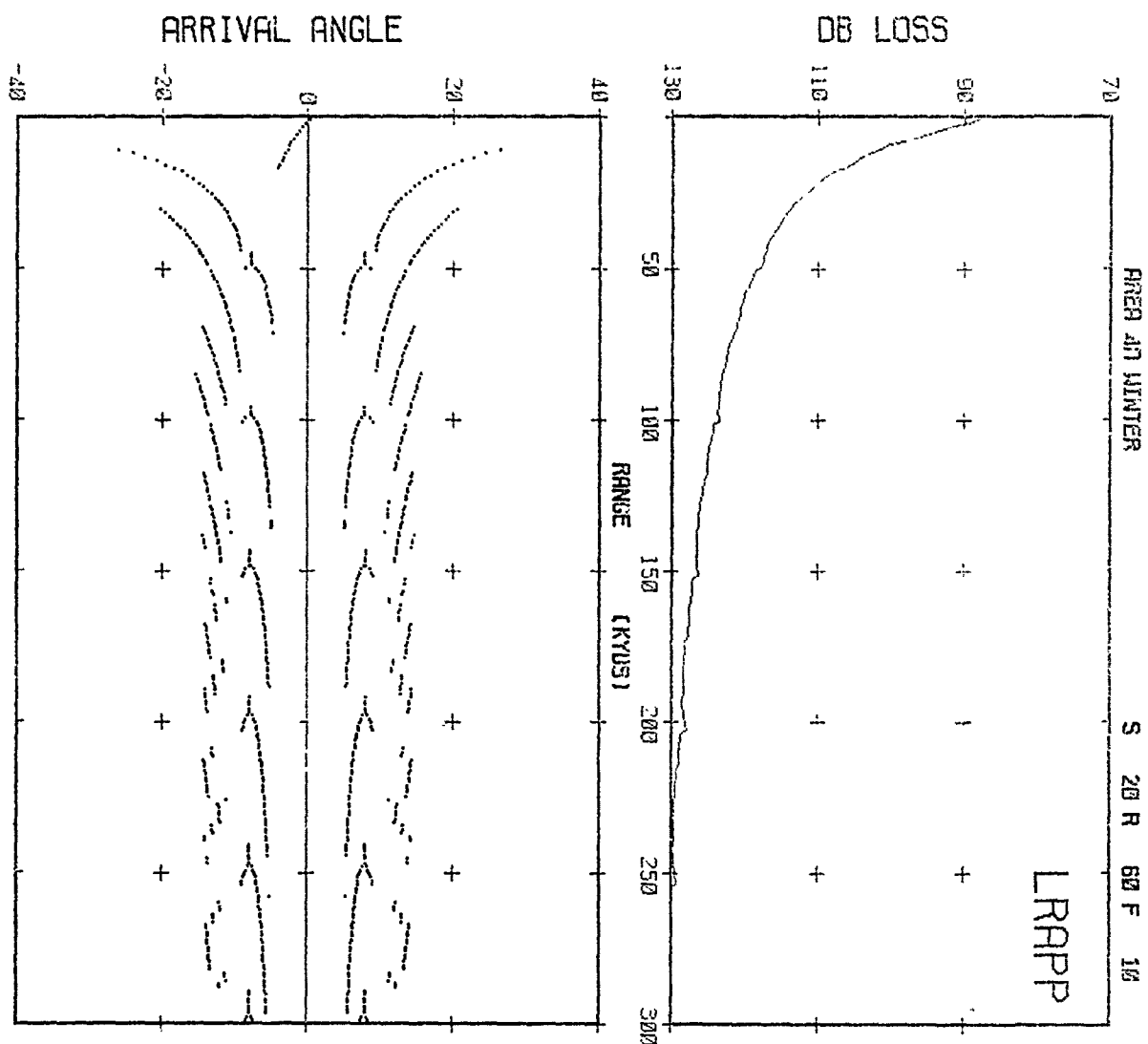
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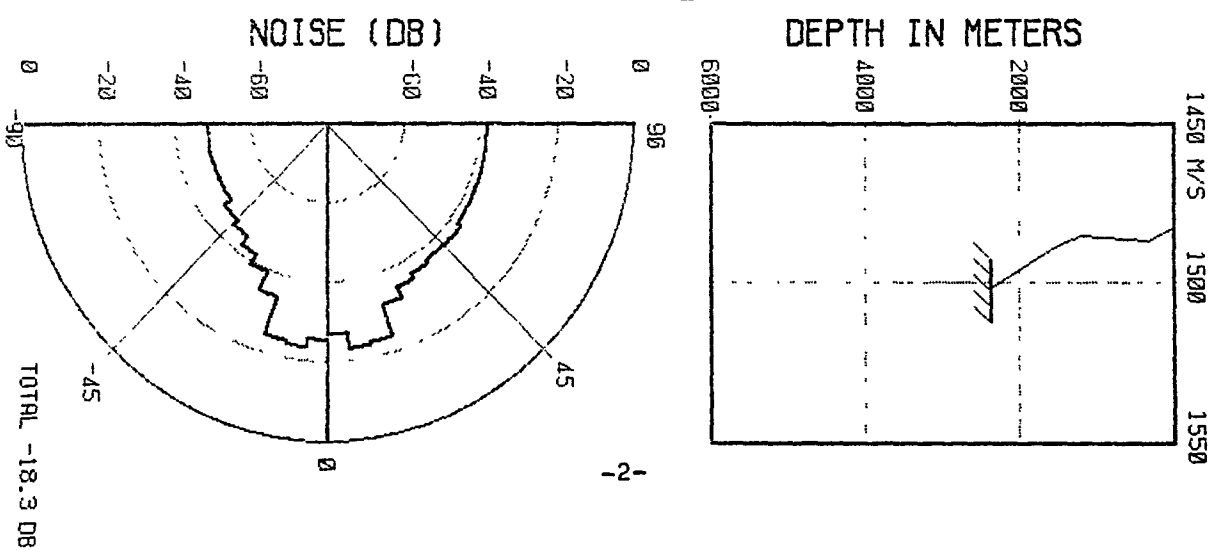
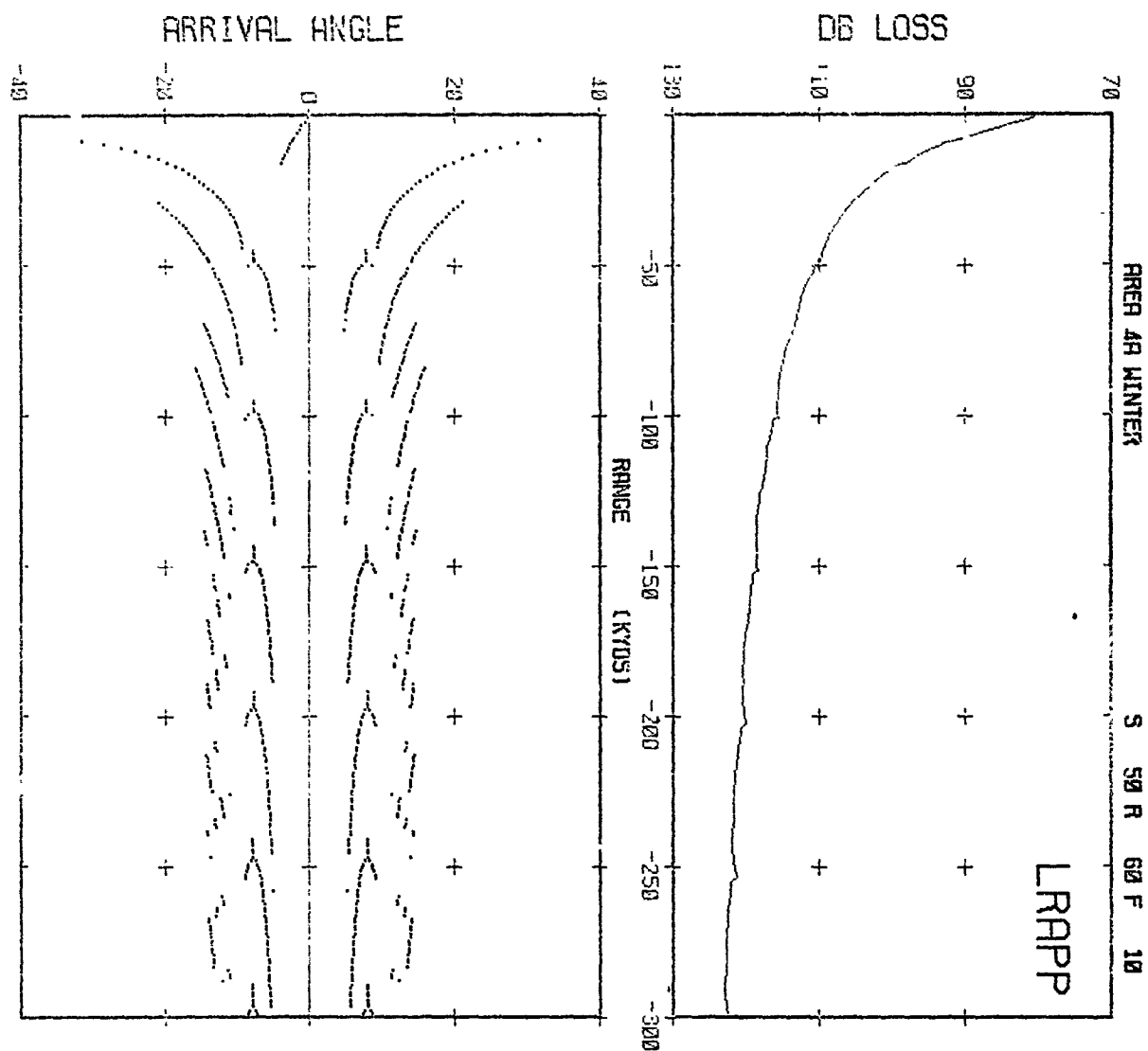
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ACOUSTIC ENVIRONMENTAL SCENARIOS AND PREDICTIONS
FOR ASW

VOLUME X: AREA 4A WINTER
PREDICTIONS FOR PASSIVE SONAR

Refer to Volume I of this report for an explanation of the
plot format and descriptions of models and ocean areas.





TOTAL -18.3 DB

AREA 4R WINTER

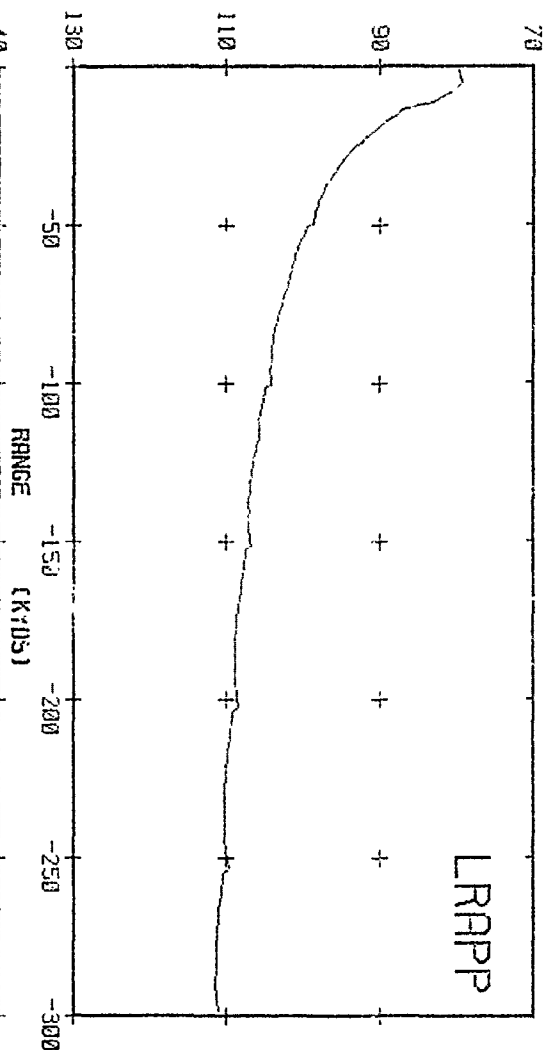
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1450 M/S

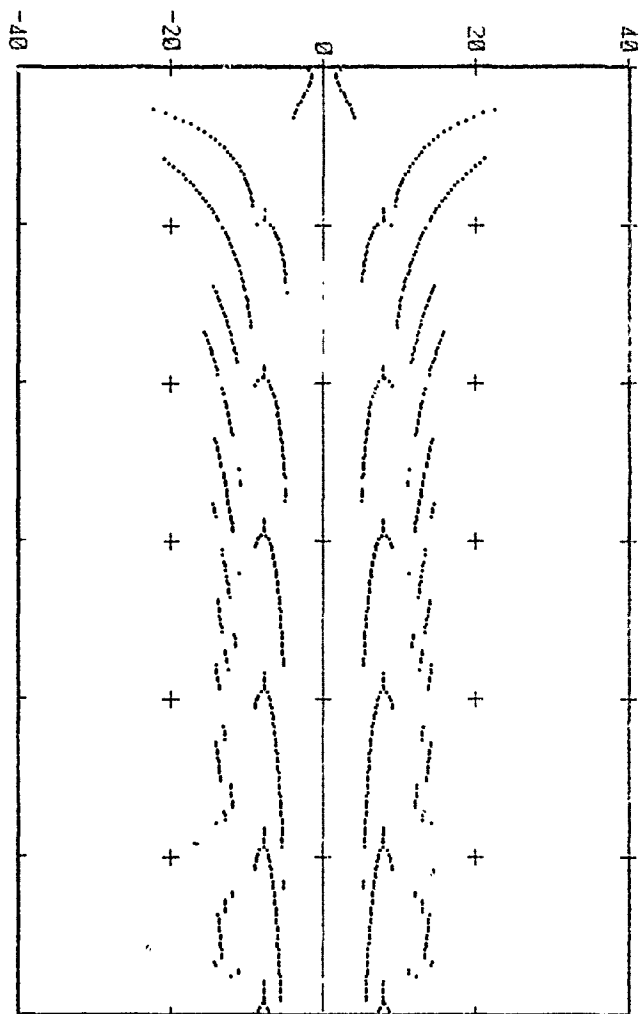
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1550

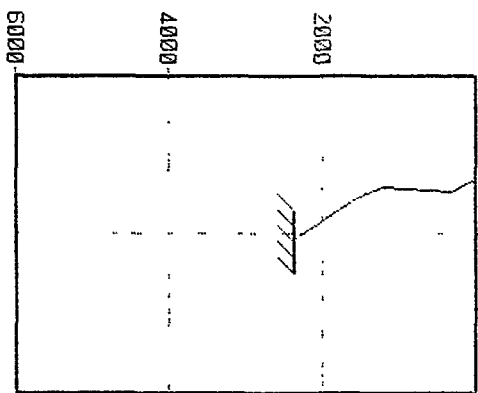
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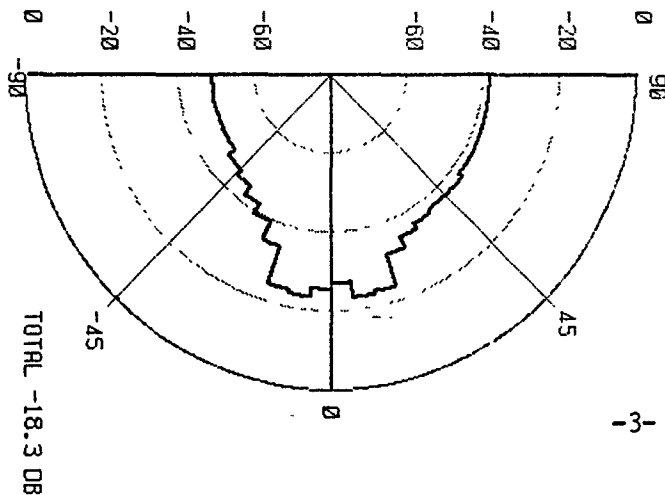
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

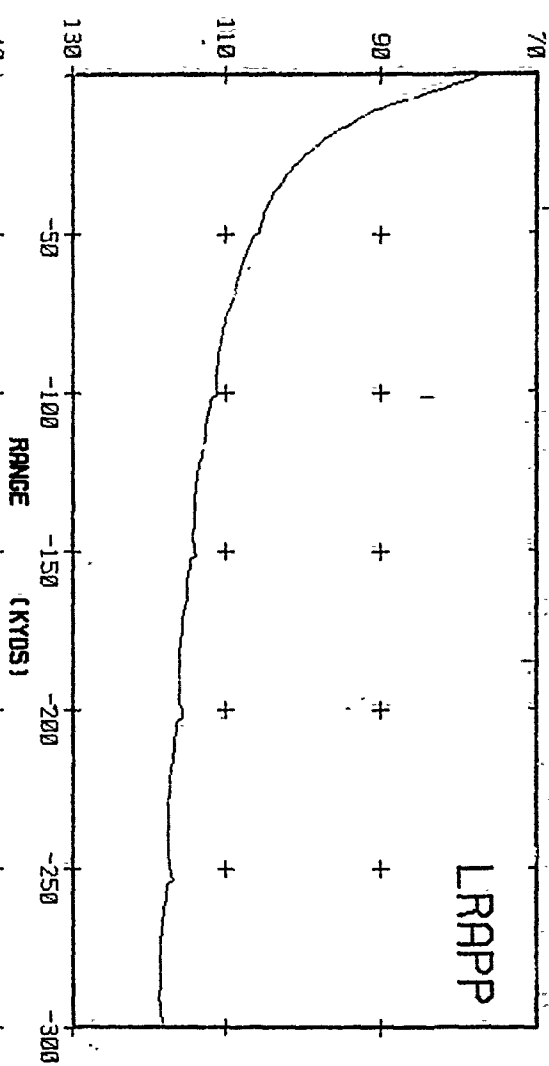


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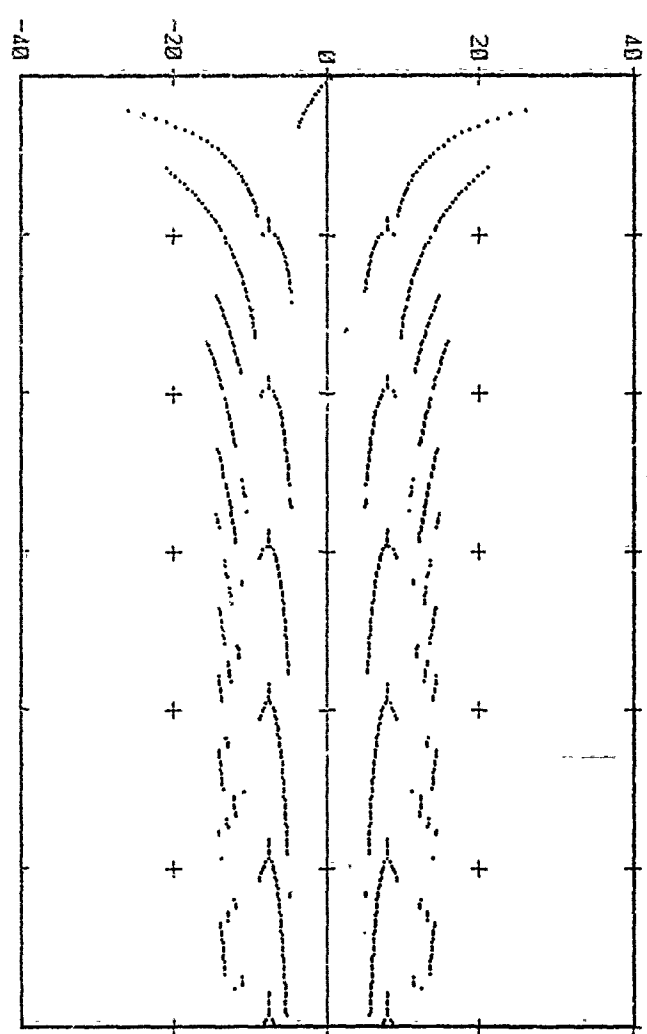
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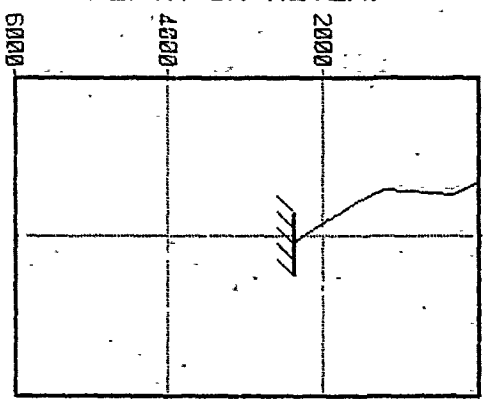
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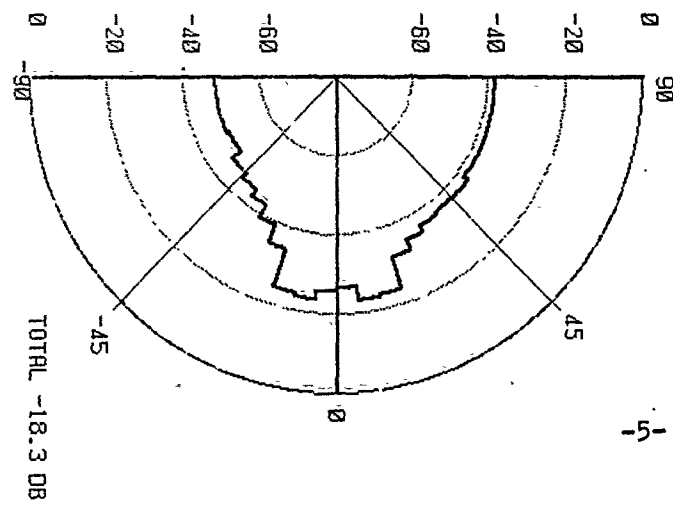
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DEPTH IN METERS



NOISE (DB)

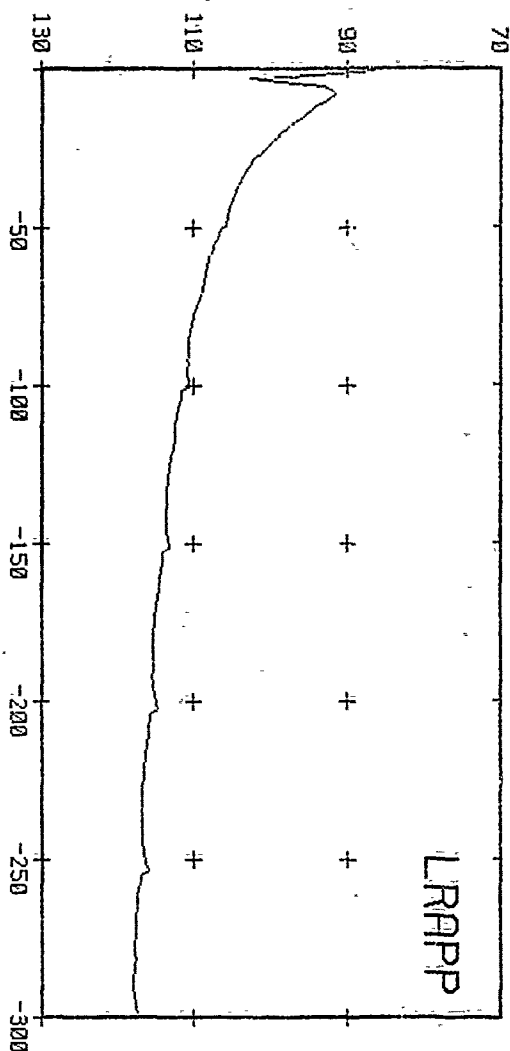


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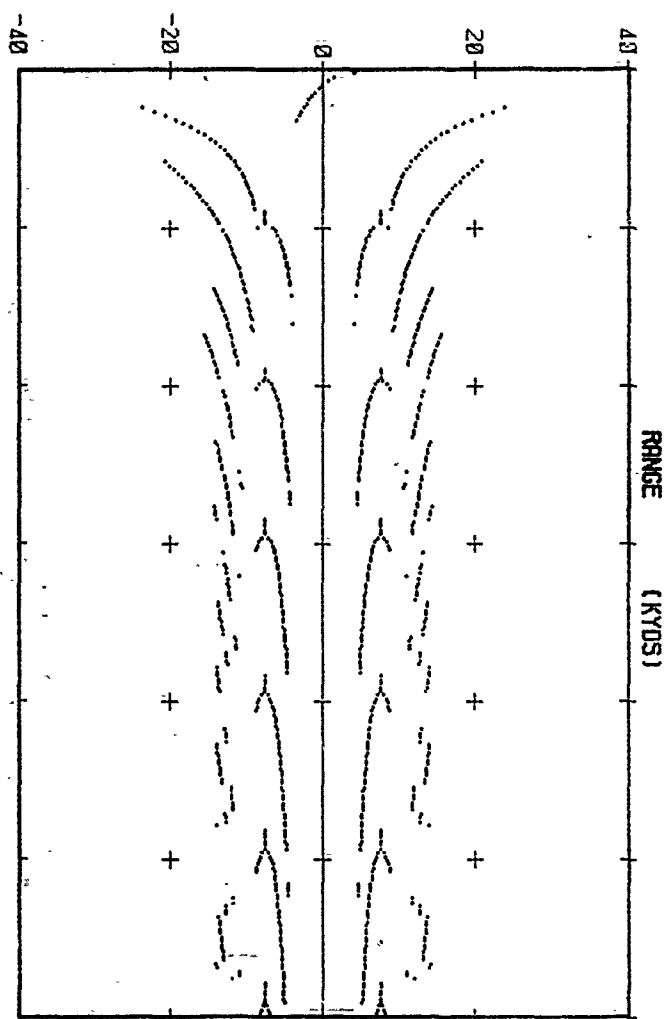
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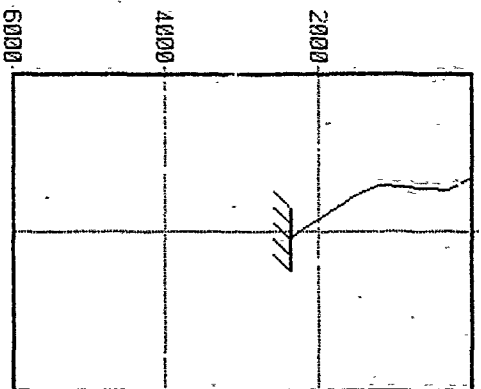
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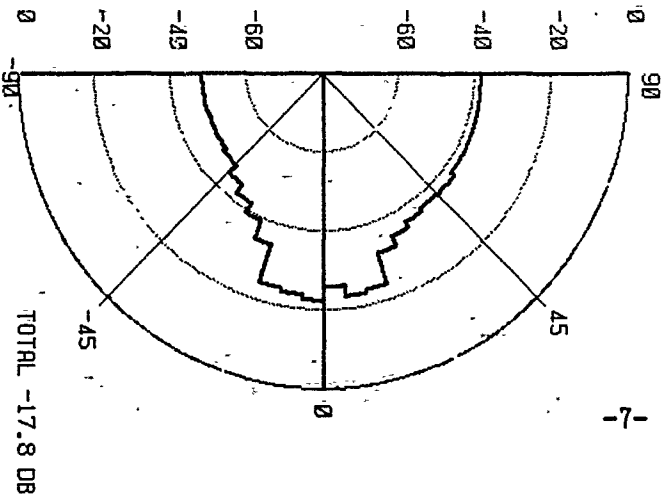
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DEPTH IN METERS



NOISE (DB)



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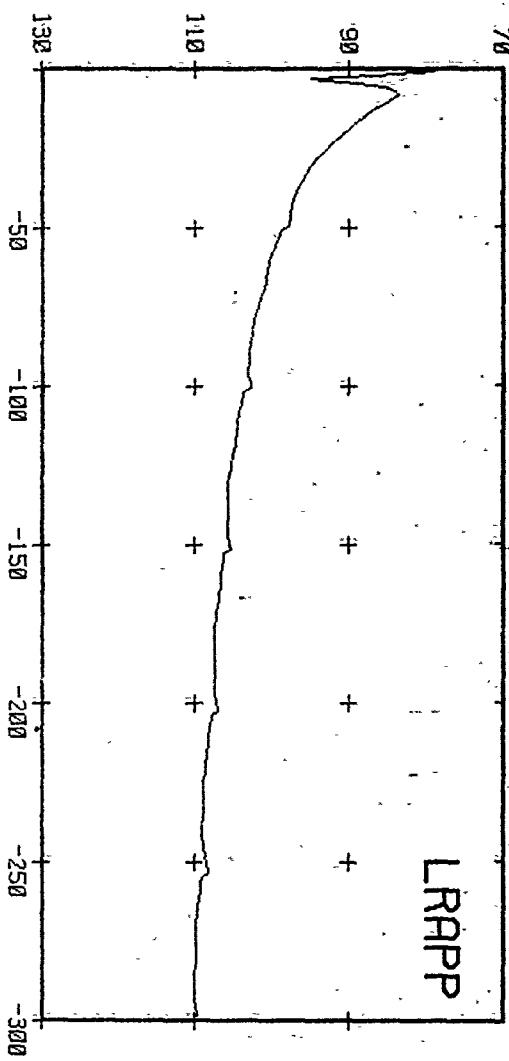
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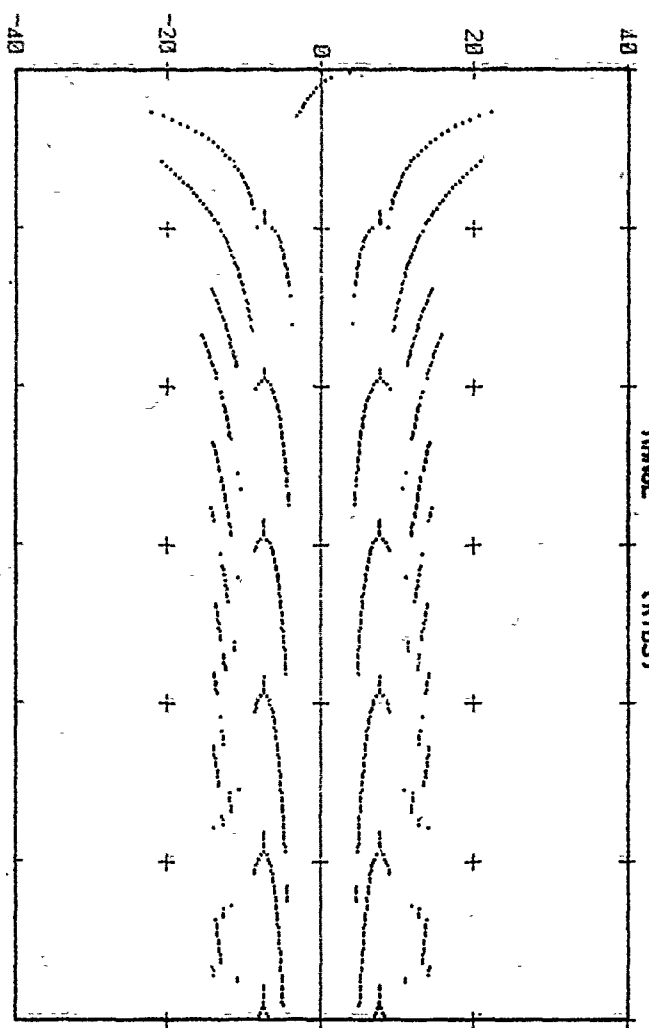
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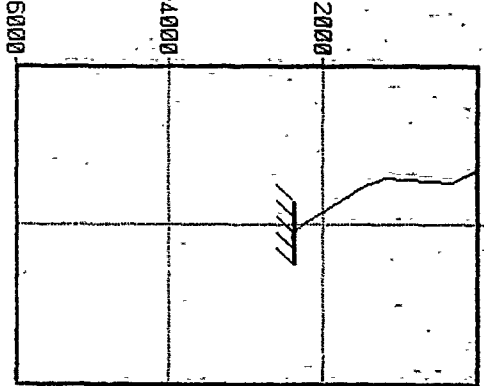


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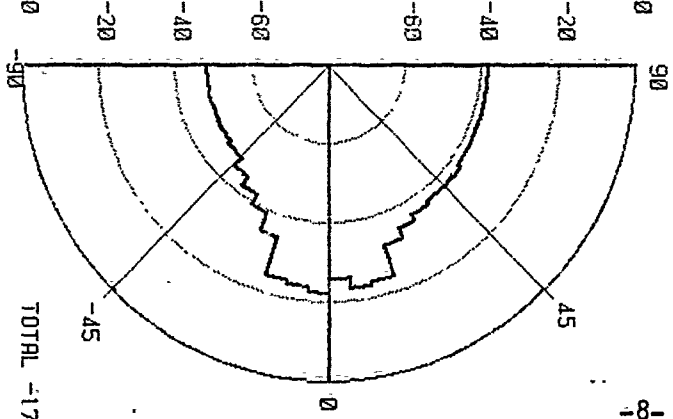
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DEPTH IN METERS



NOISE (DB)

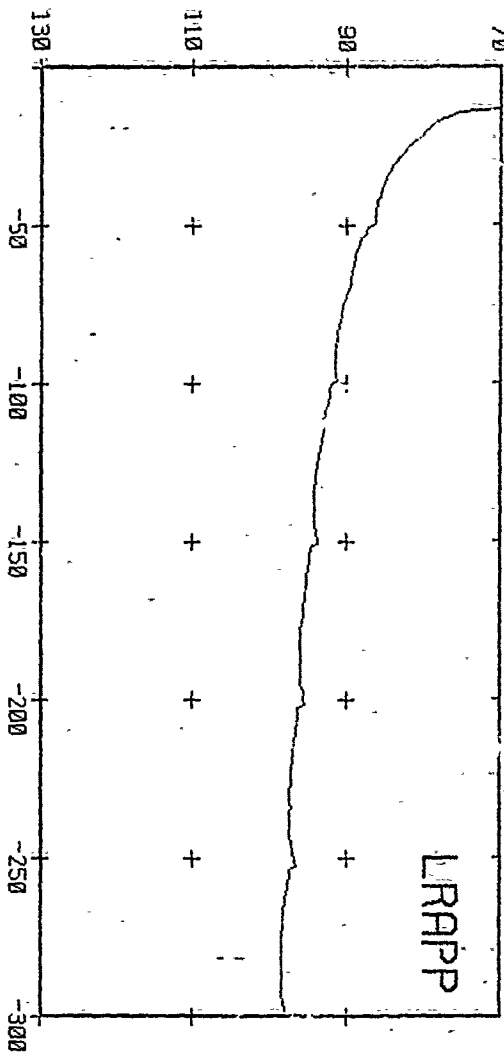


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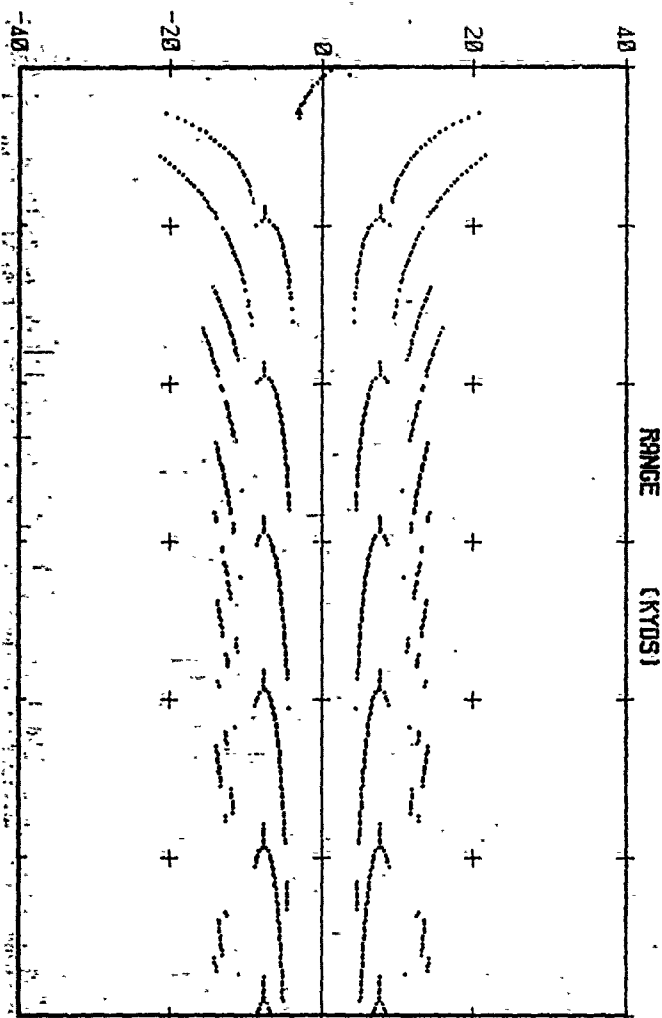
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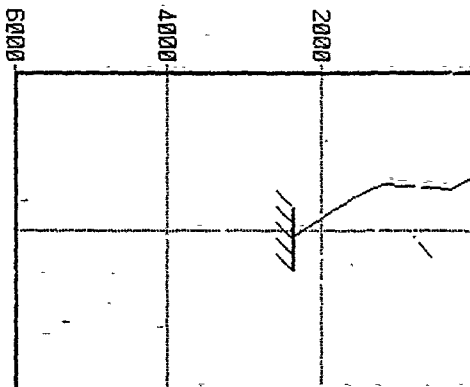
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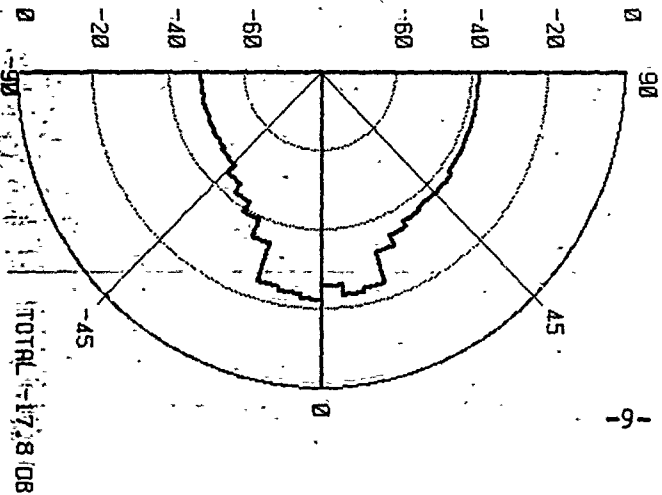
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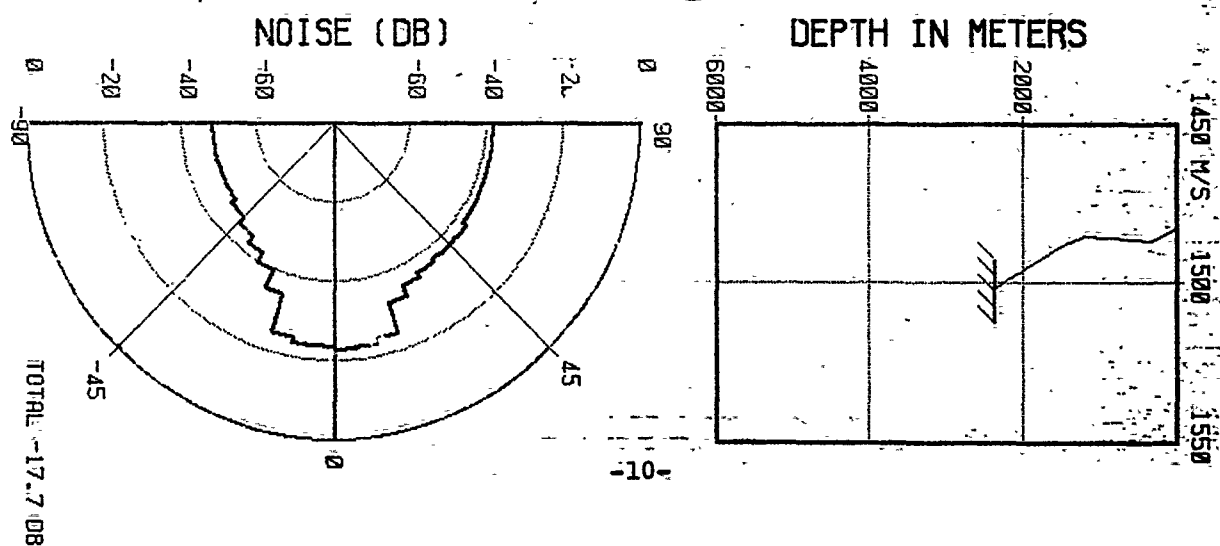
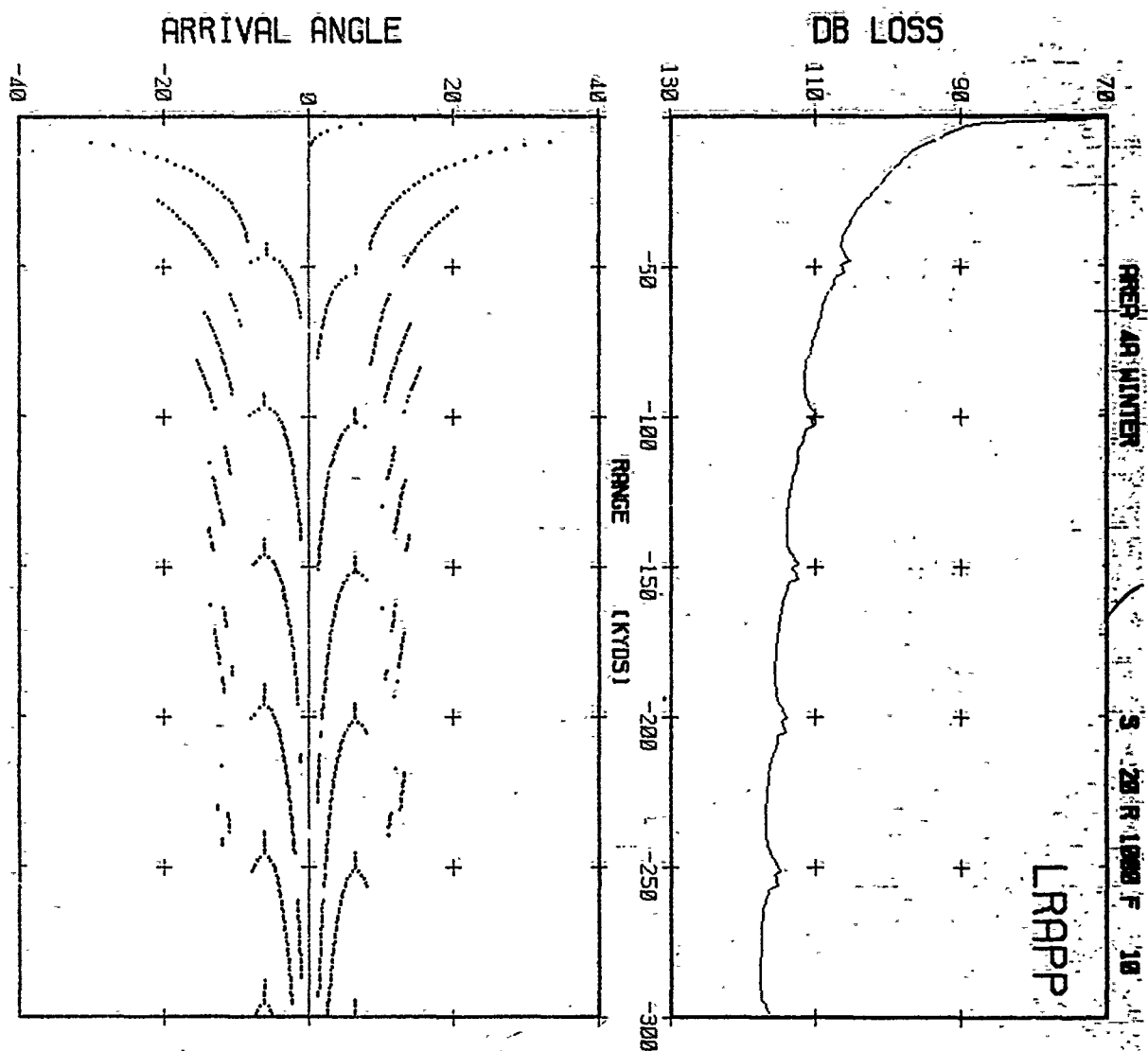
DEPTH IN METERS



NOISE (DB)



TOTAL -17.8 DB

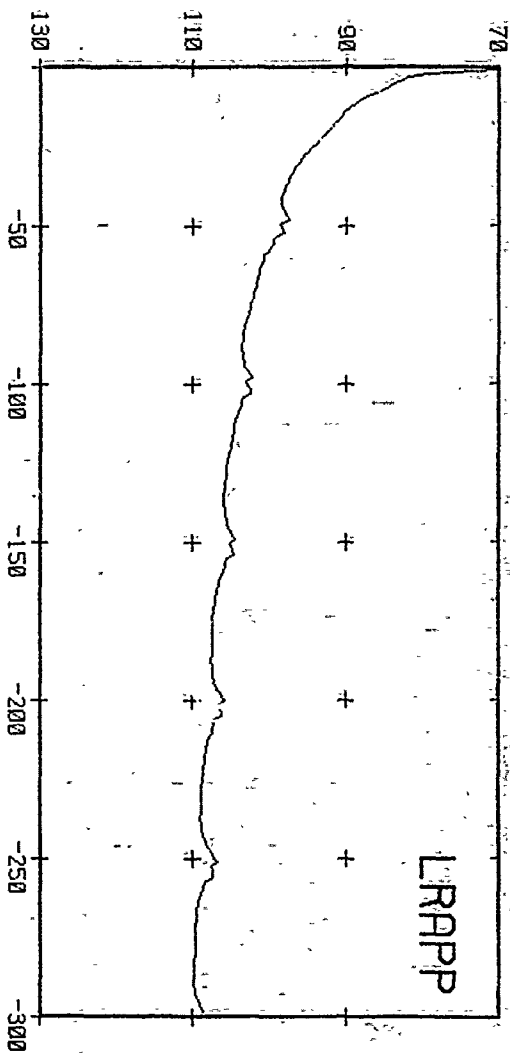


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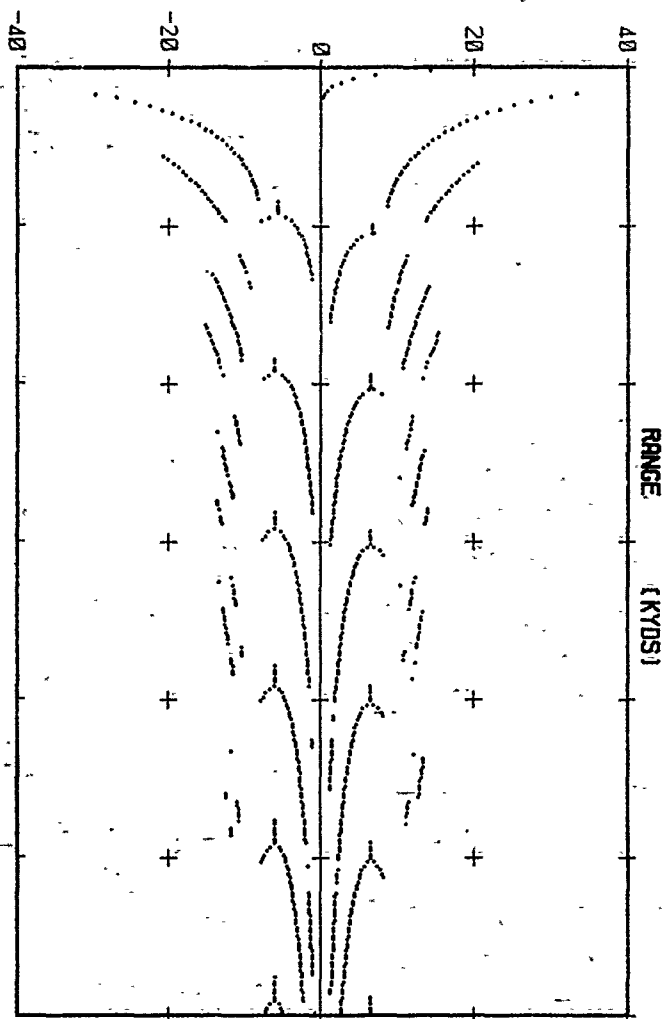
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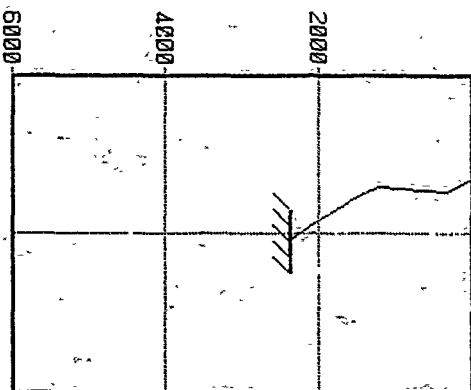
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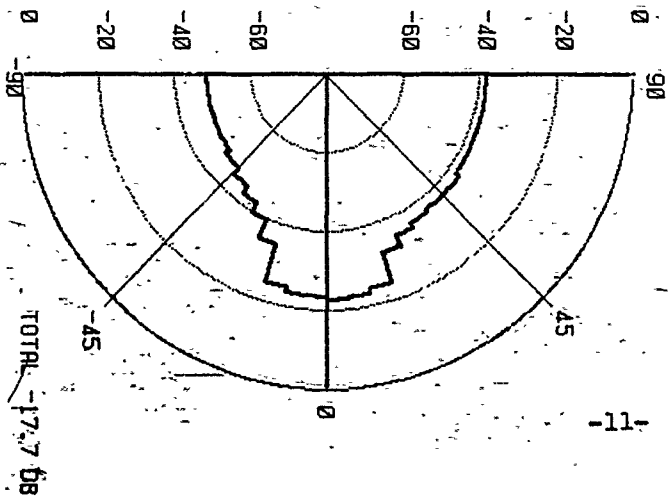
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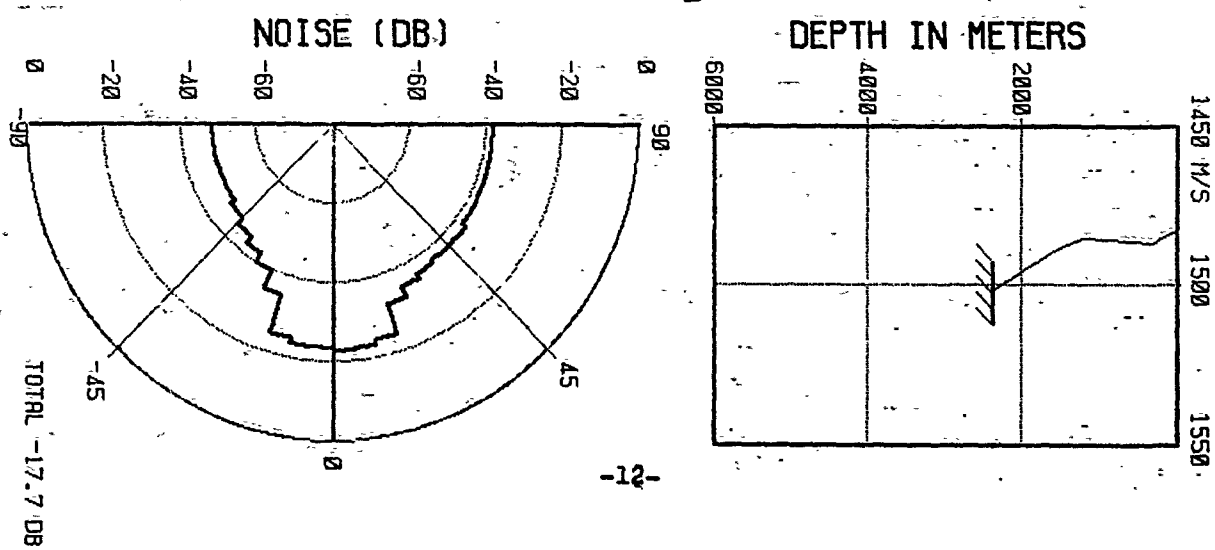
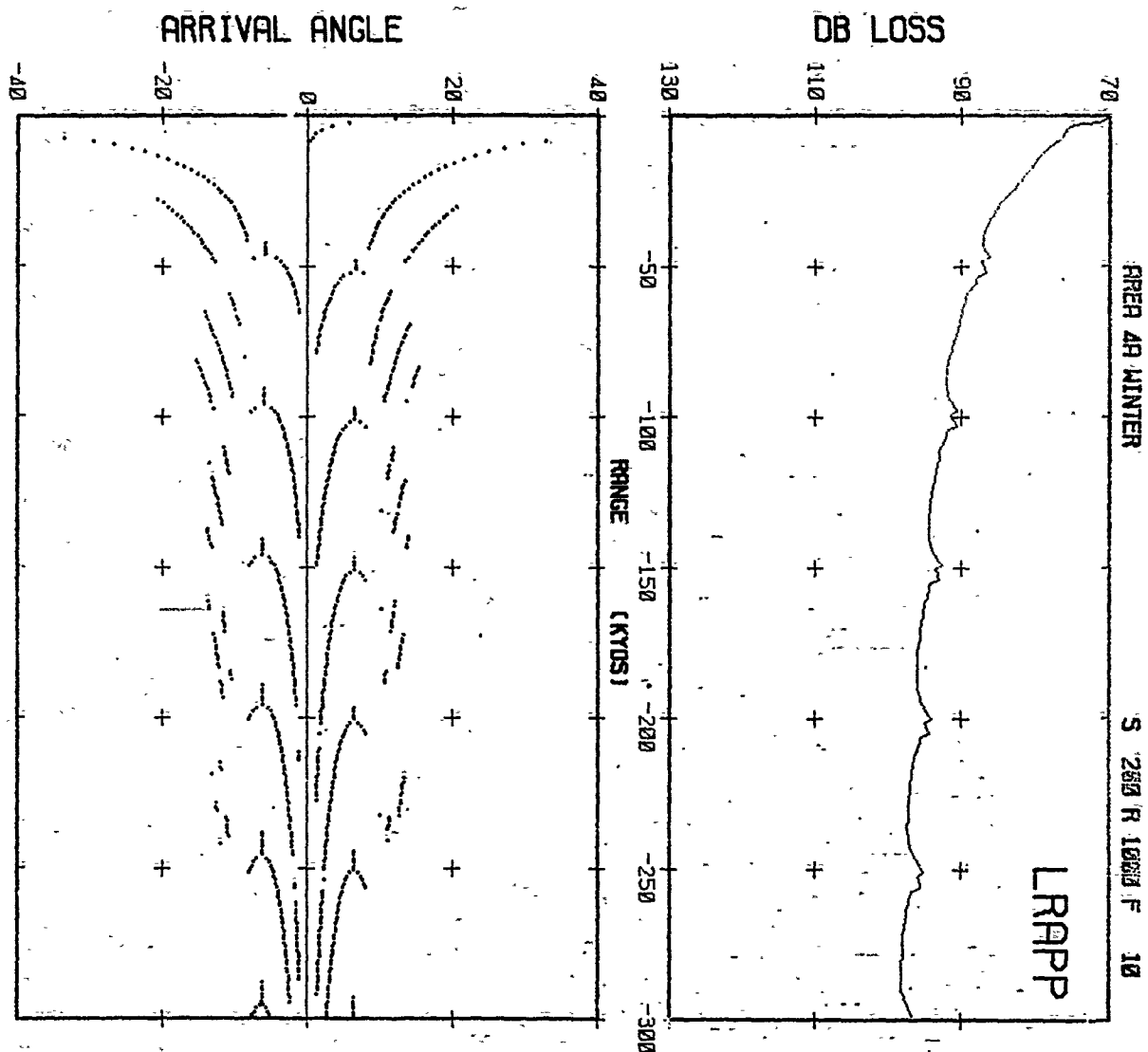


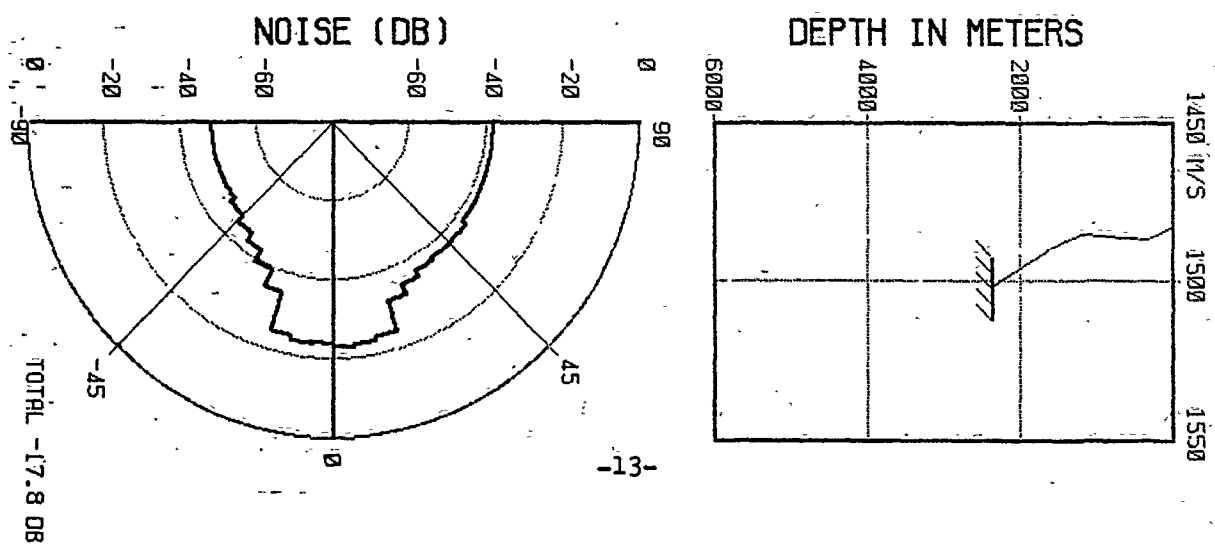
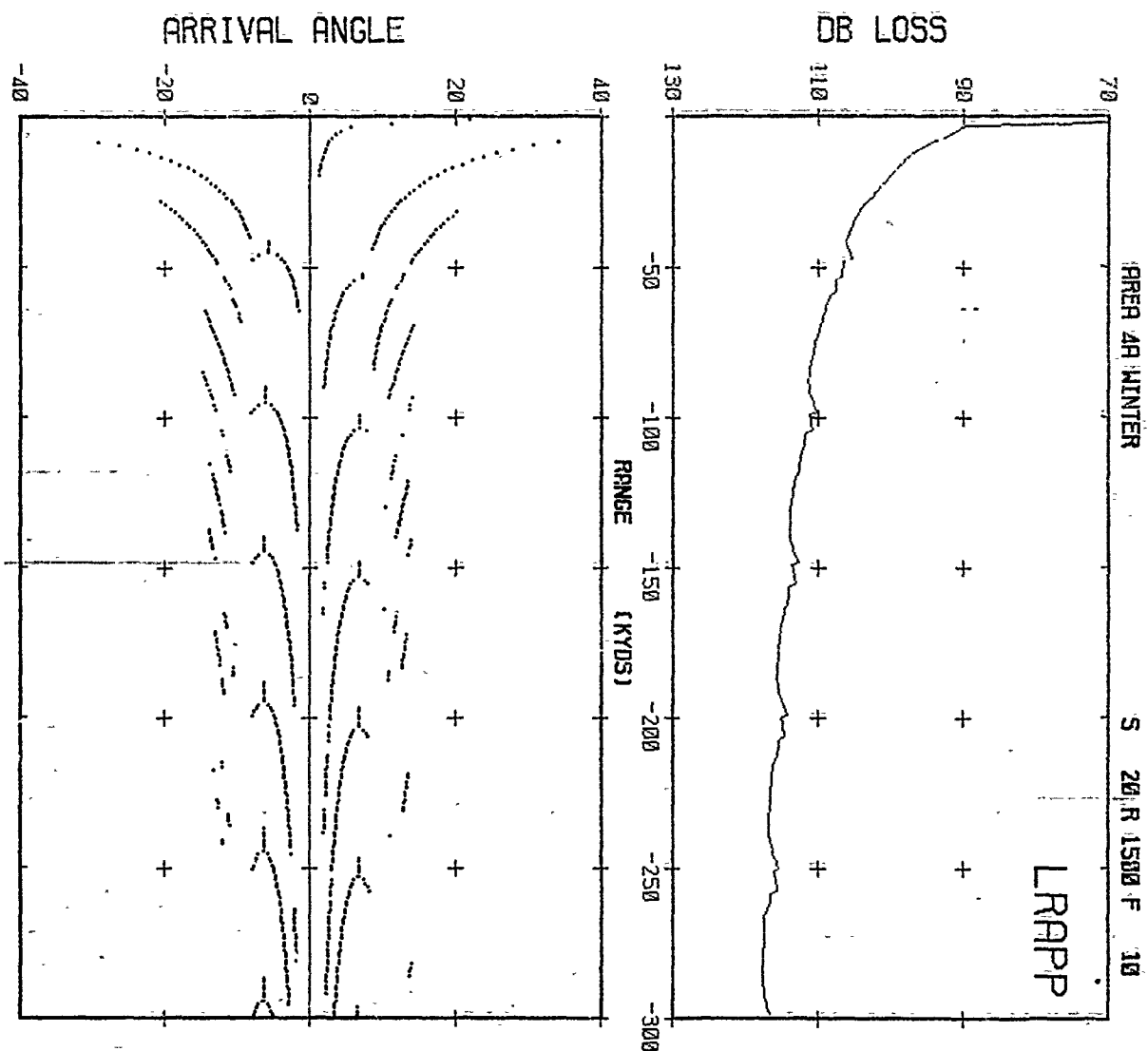
DEPTH IN METERS

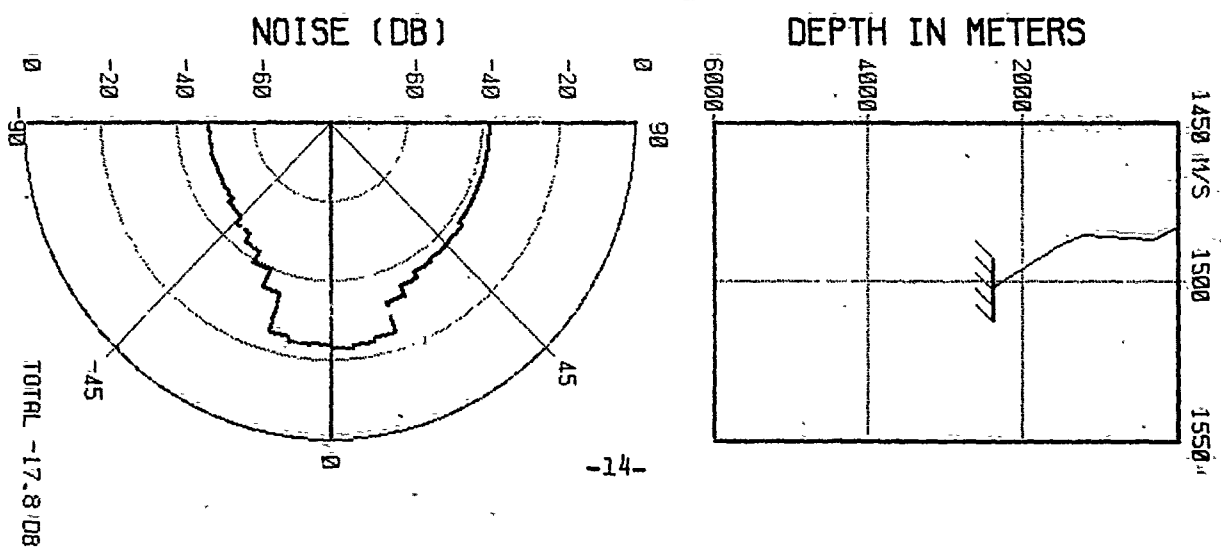
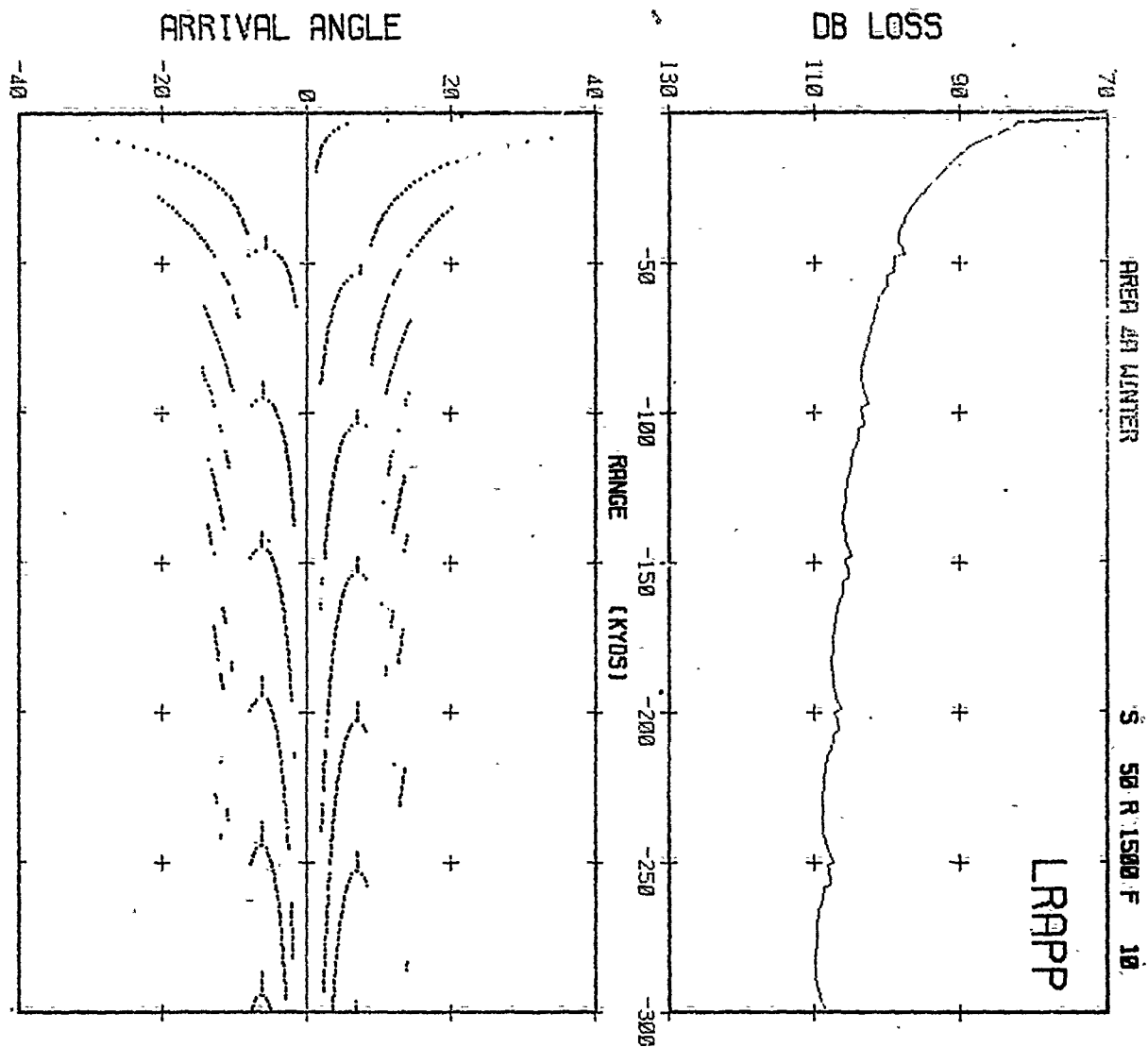


NOISE (DB)







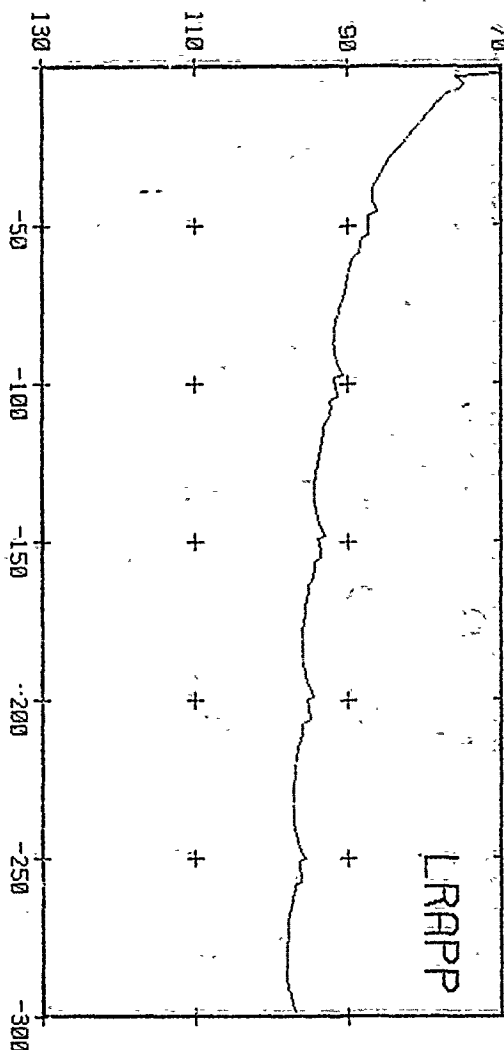


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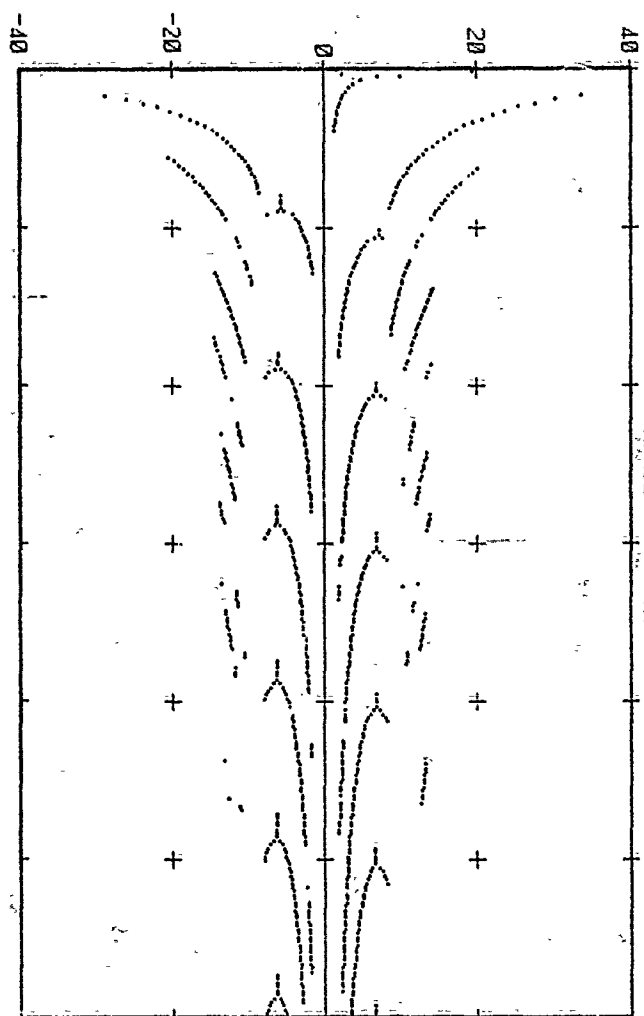
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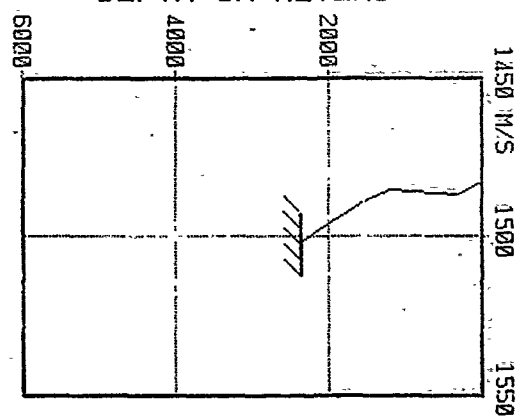
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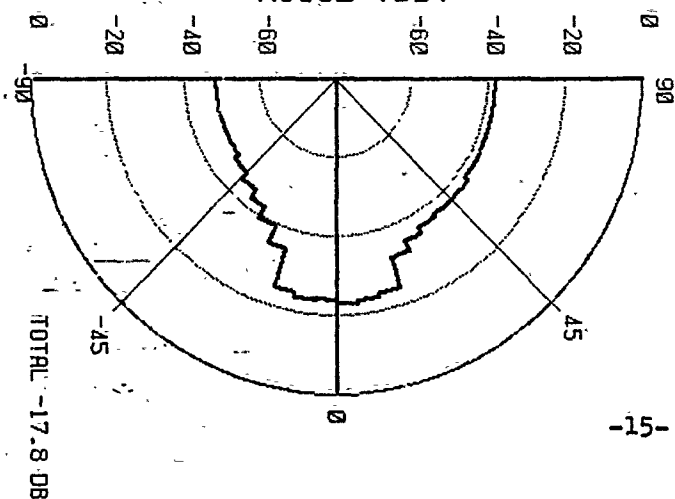
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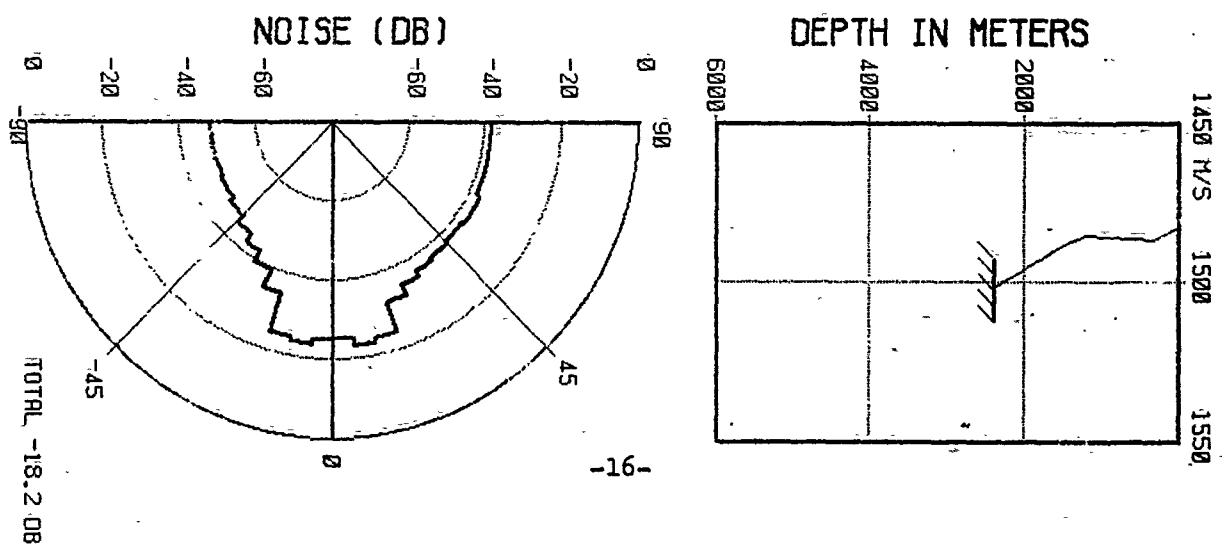
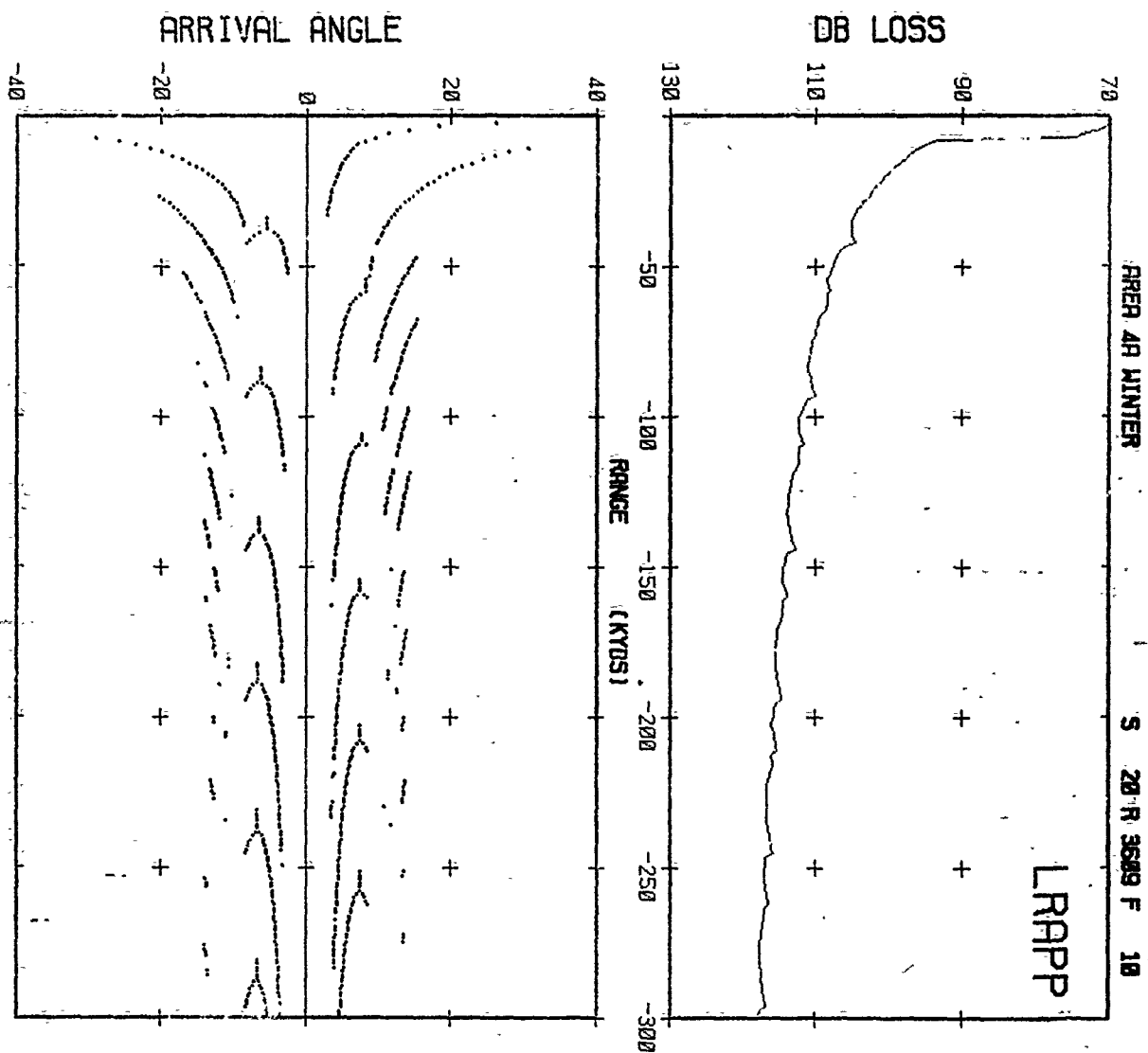


DEPTH IN METERS



NOISE (DB)



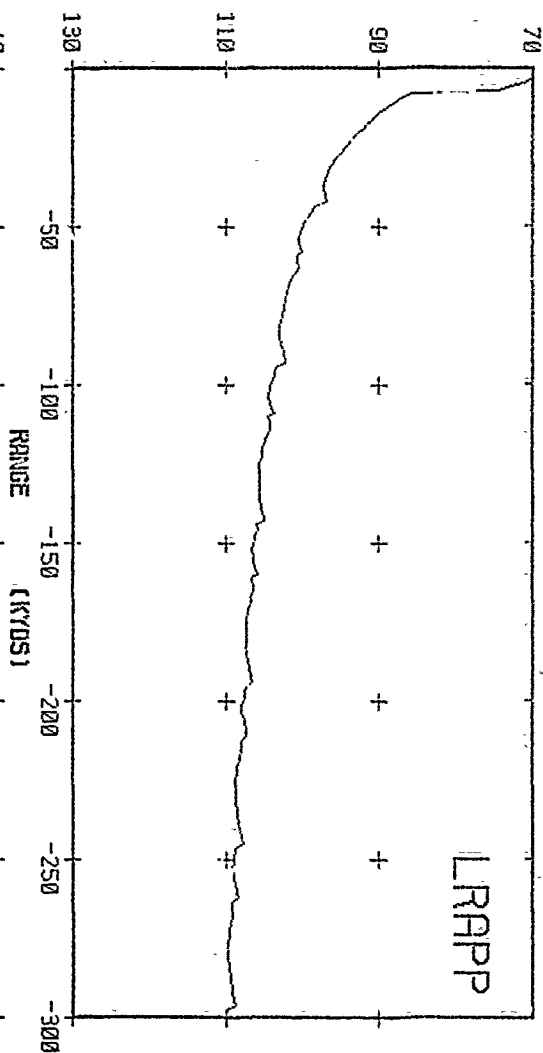


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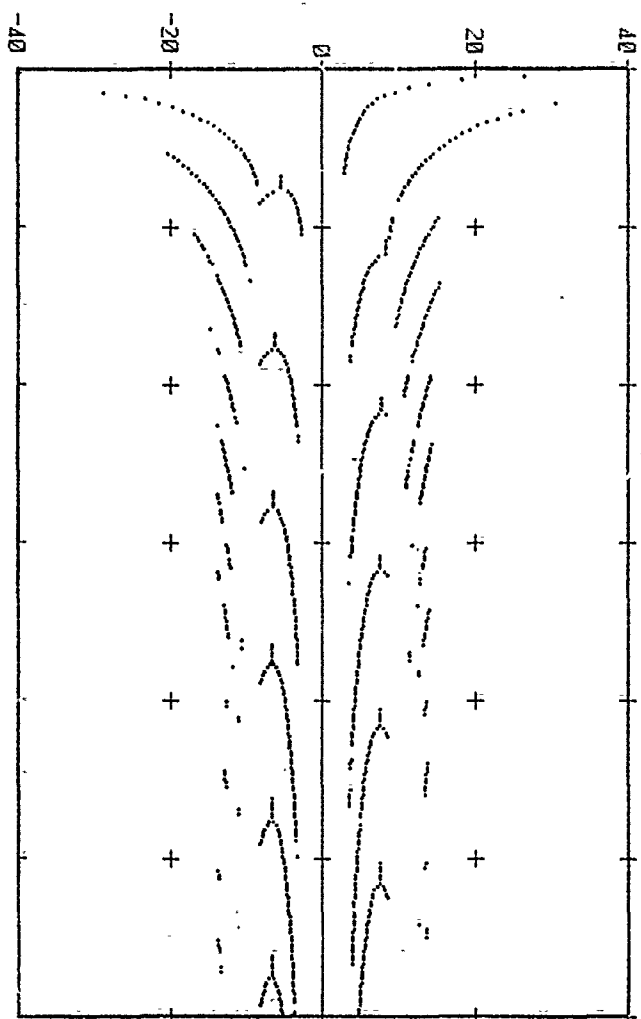
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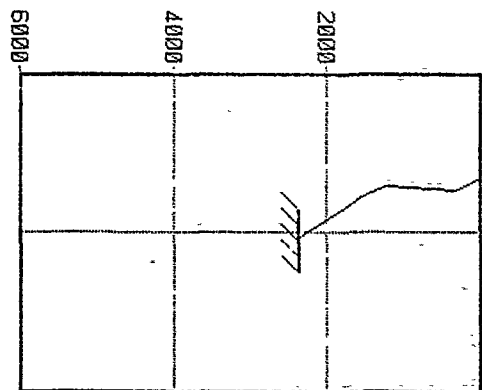
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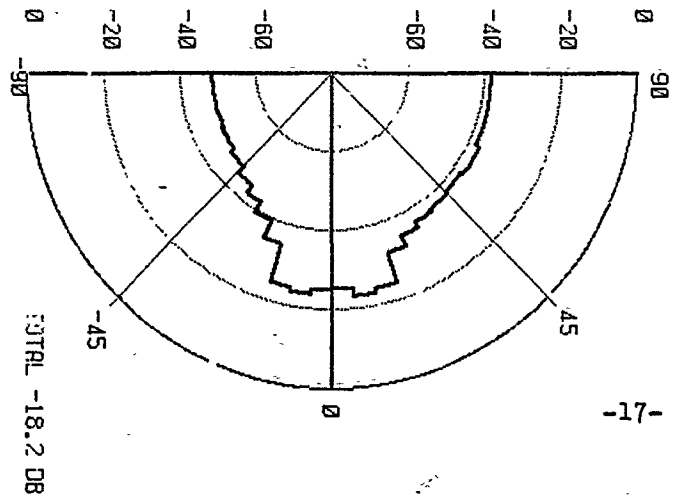
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



-17-

FREE AIR MINTER

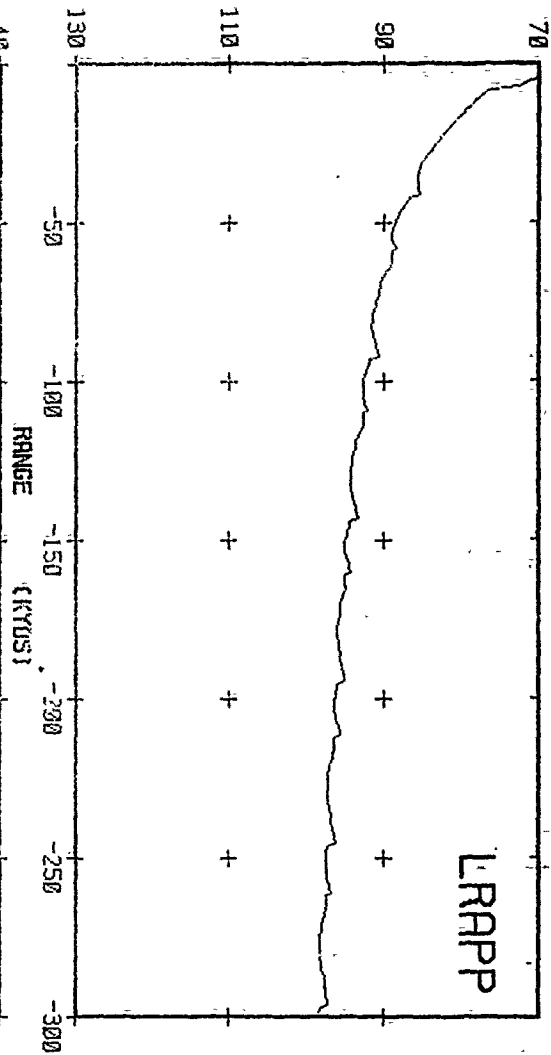
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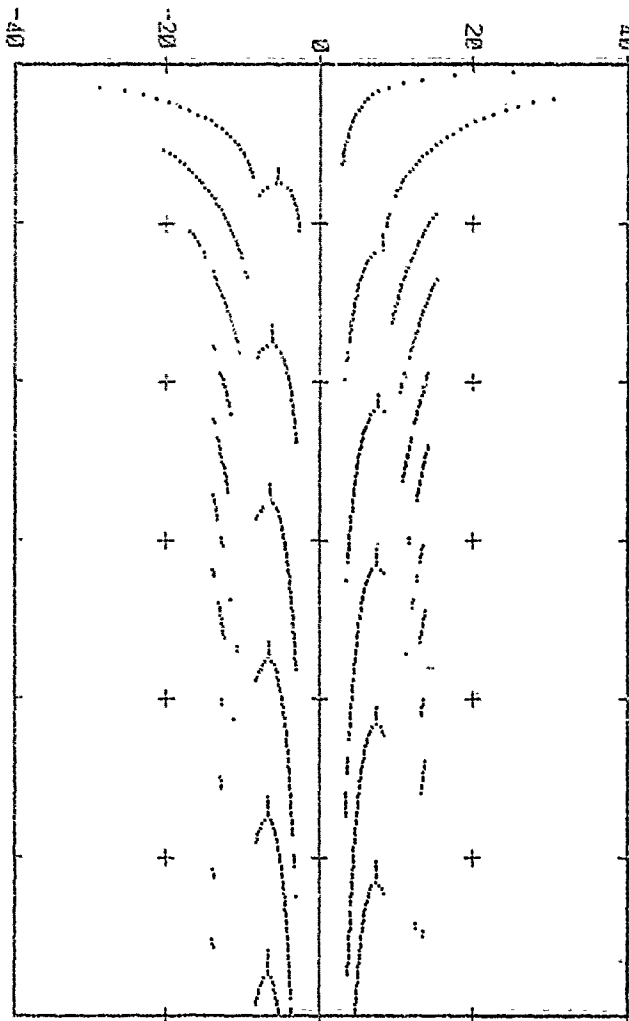
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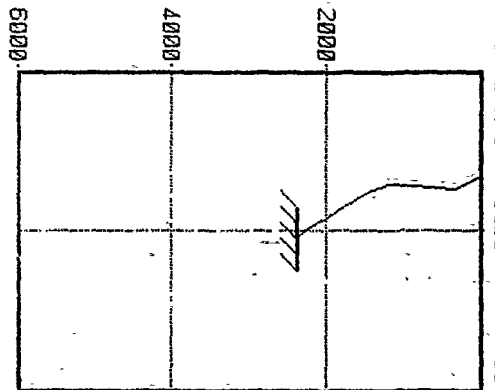
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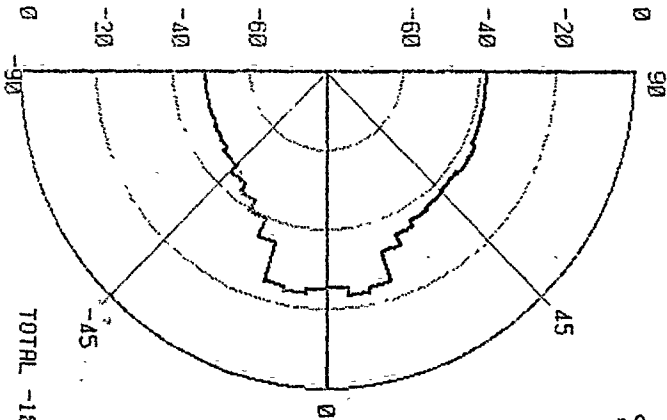
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

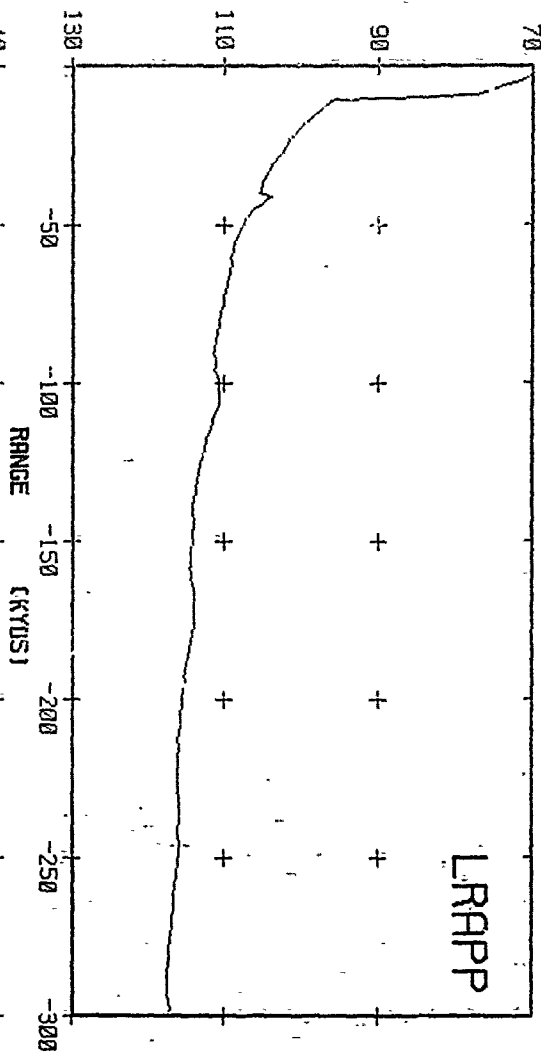


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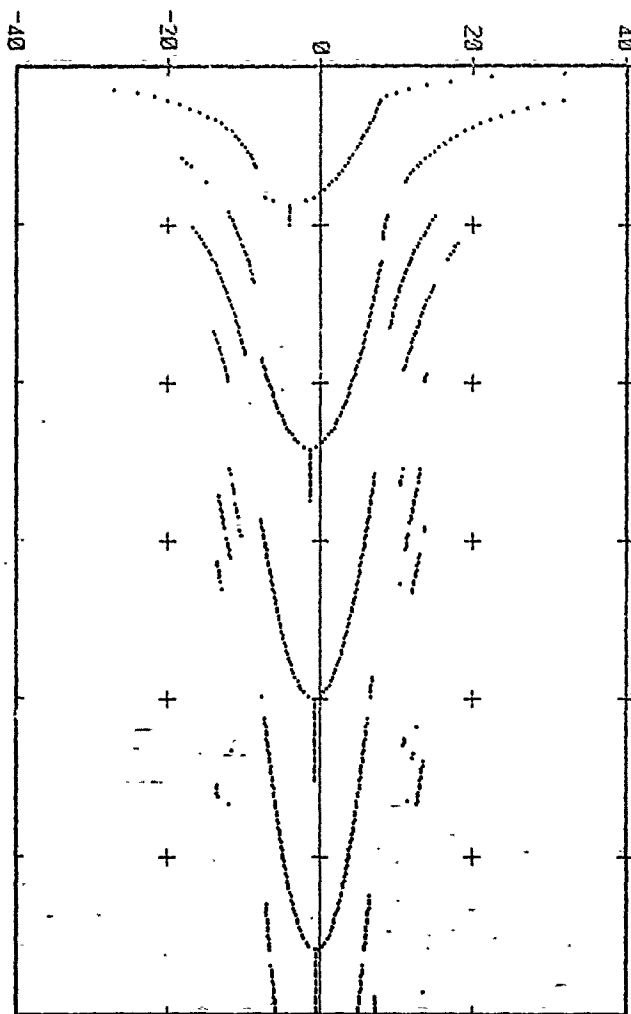
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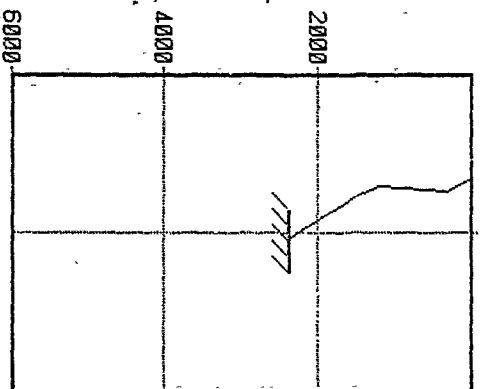


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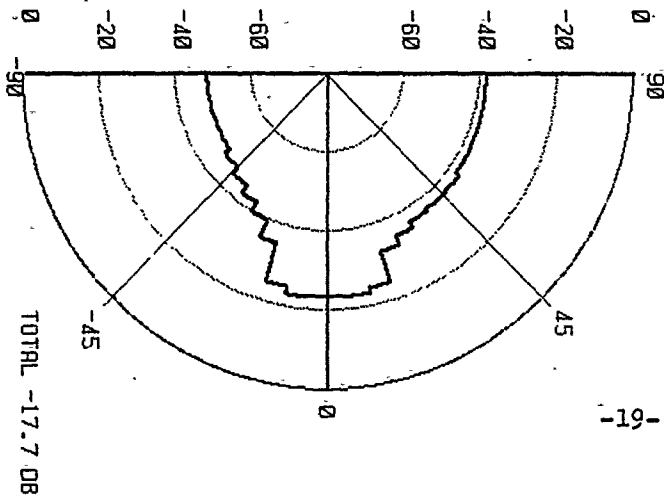
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -17.7 DB

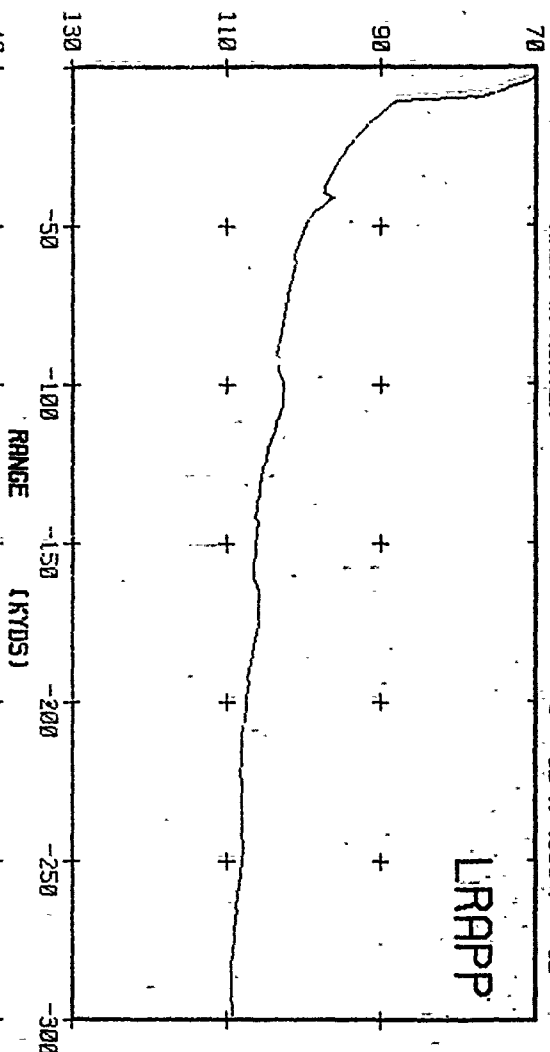
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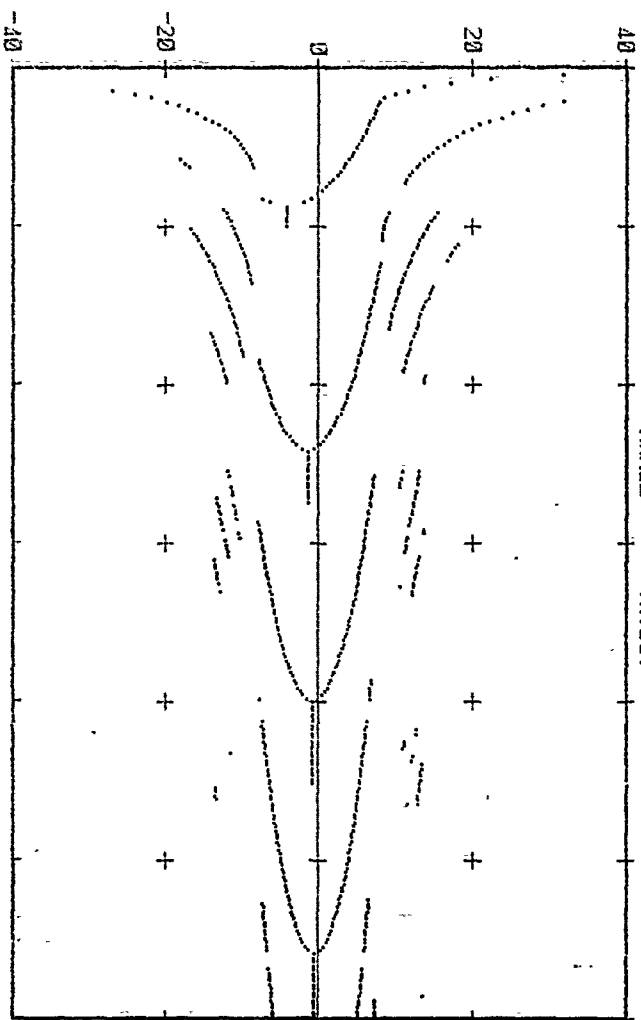
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DB LOSS

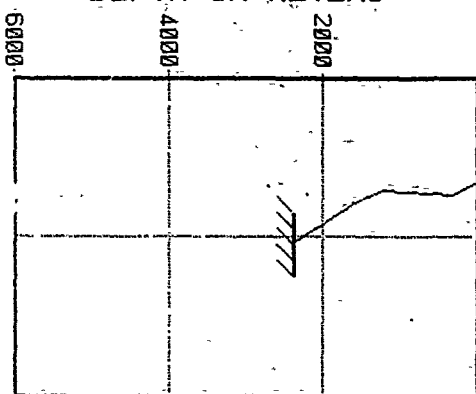


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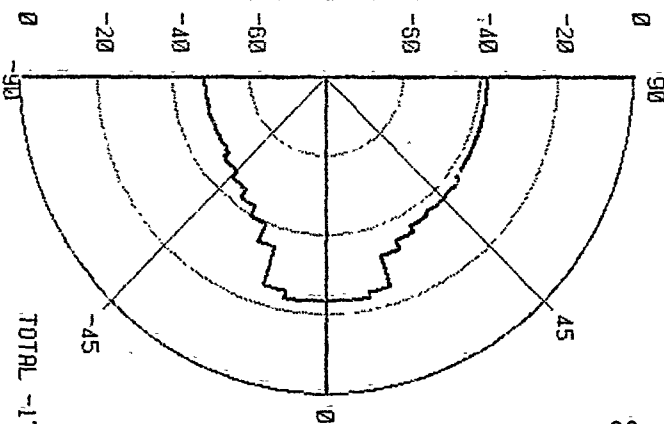
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



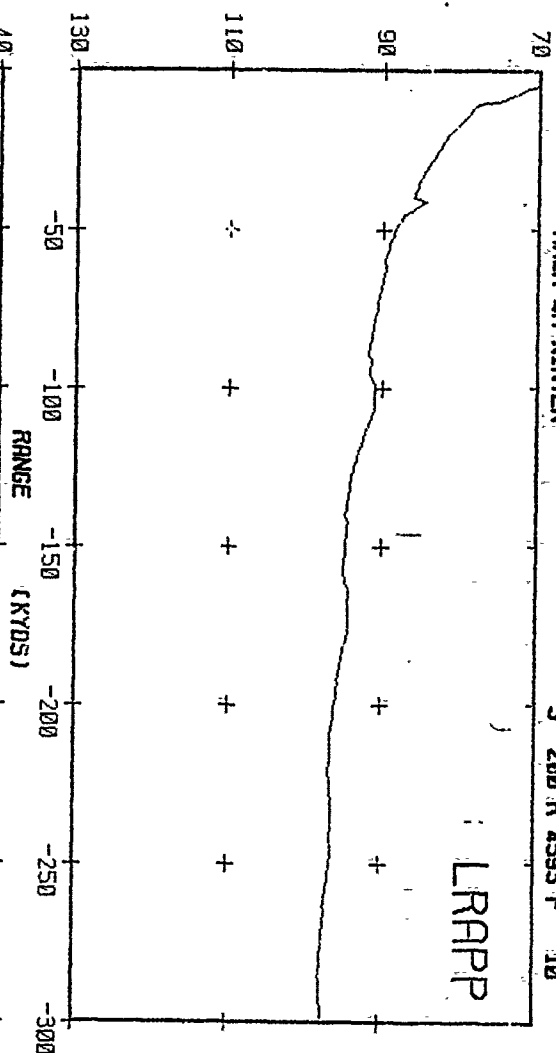
TOTAL -17.7 DB

AREA 4A WINTER

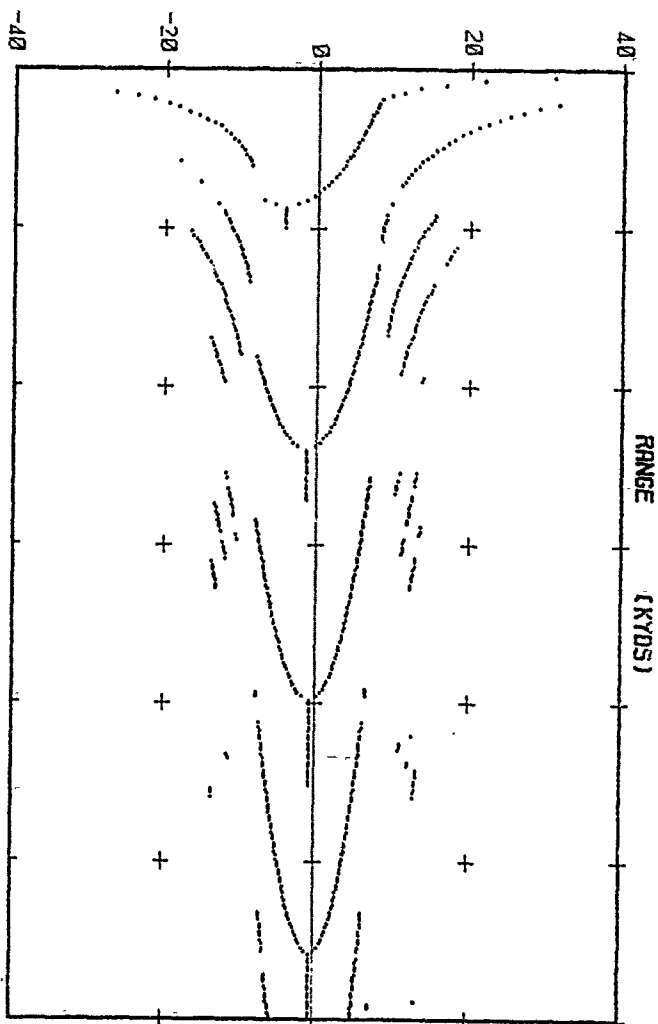
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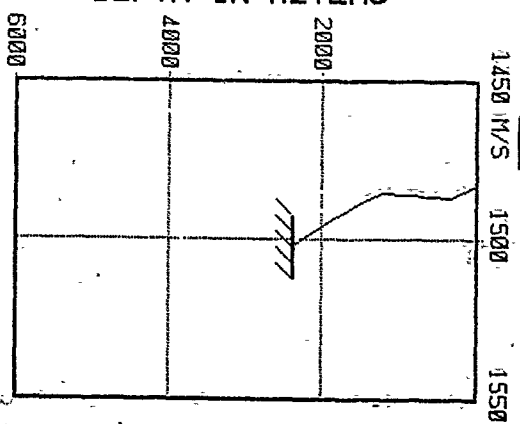
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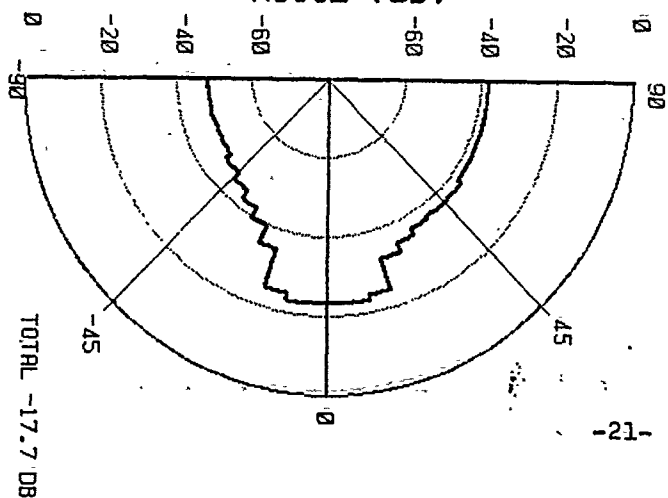
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



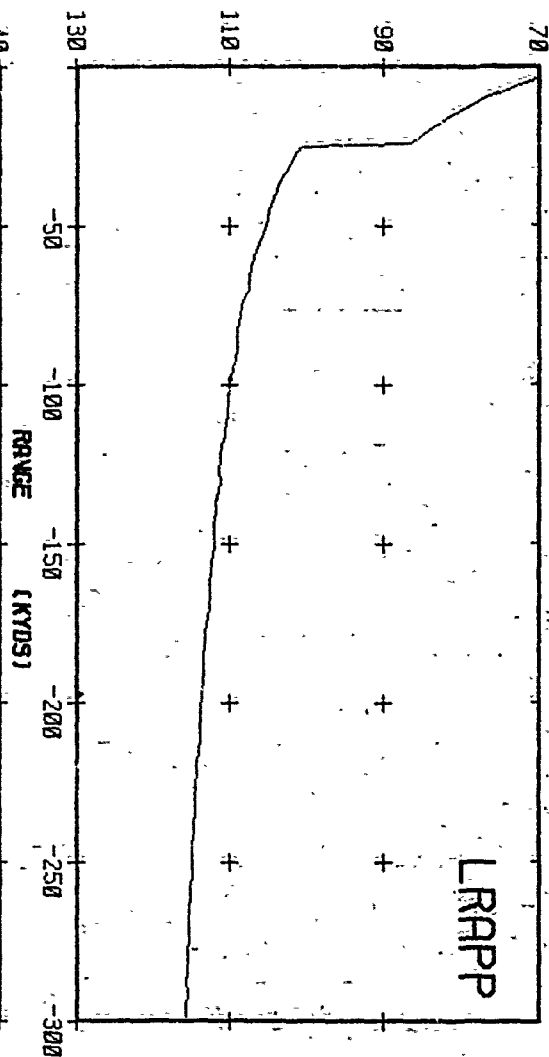
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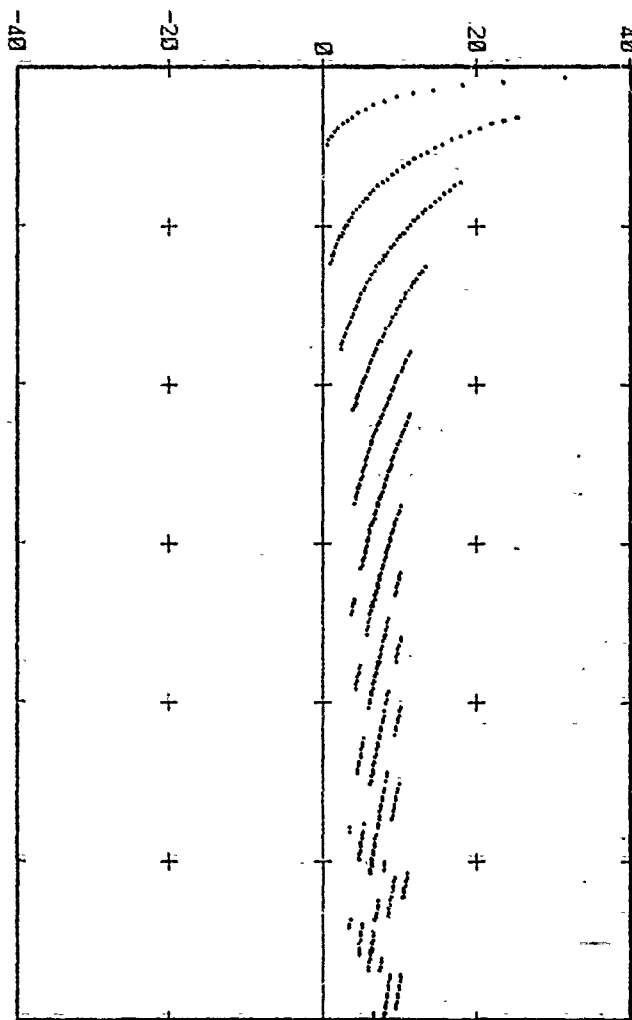
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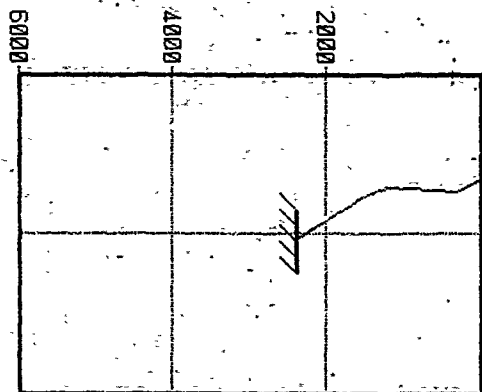
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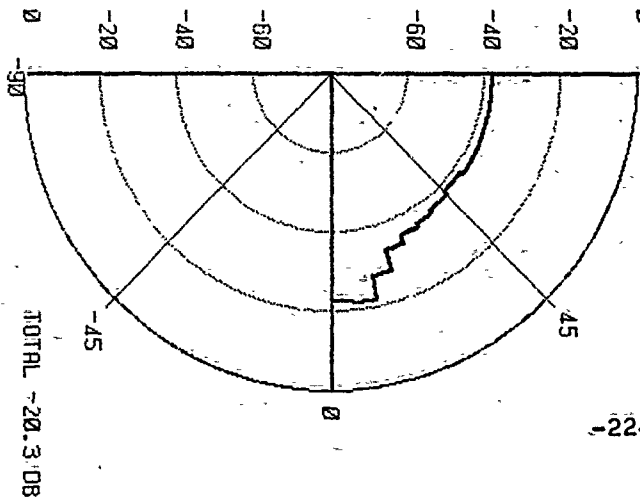
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

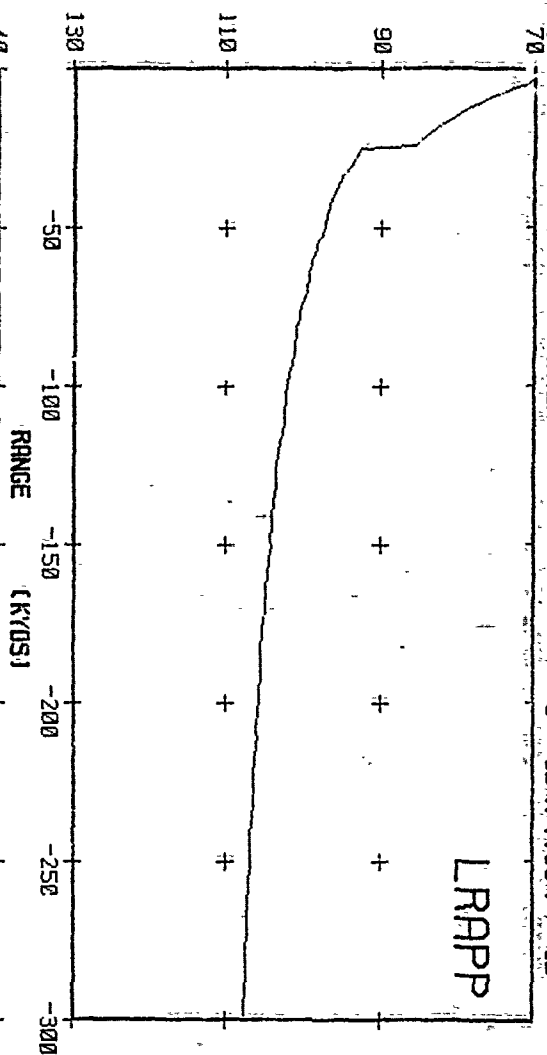


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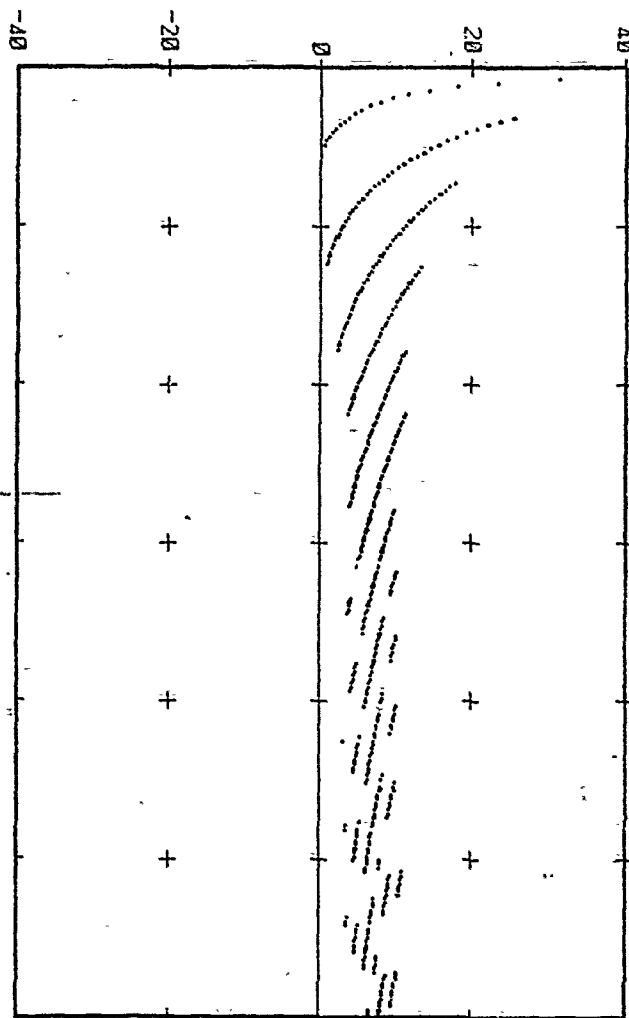
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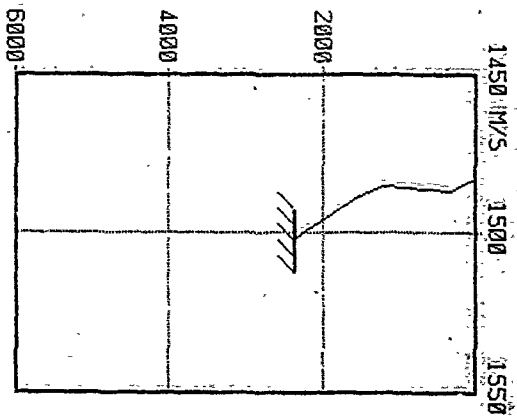
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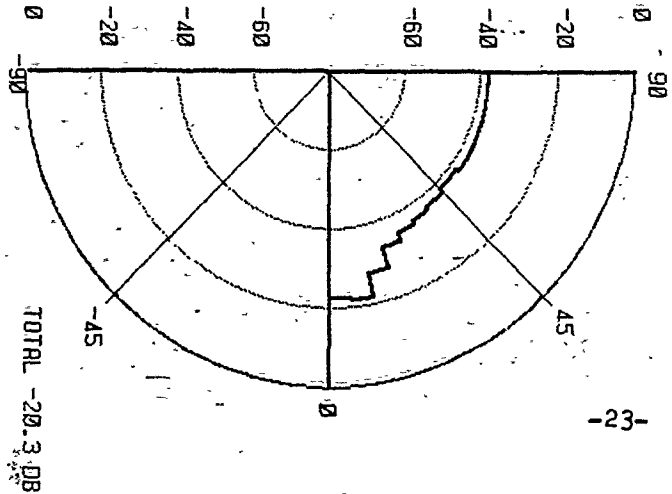
ARRIVAL ANGLE

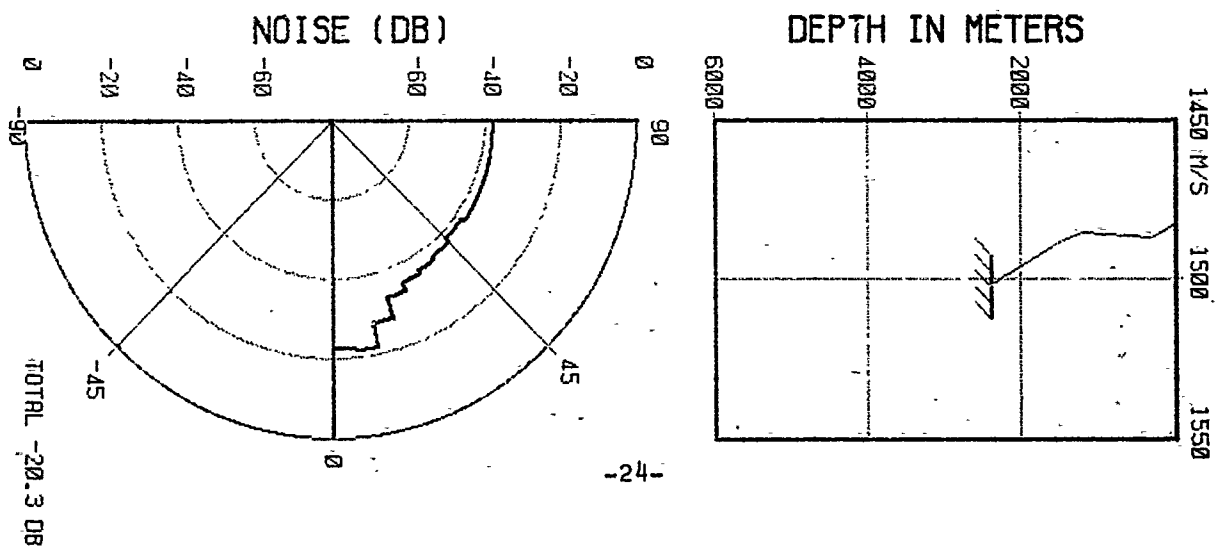
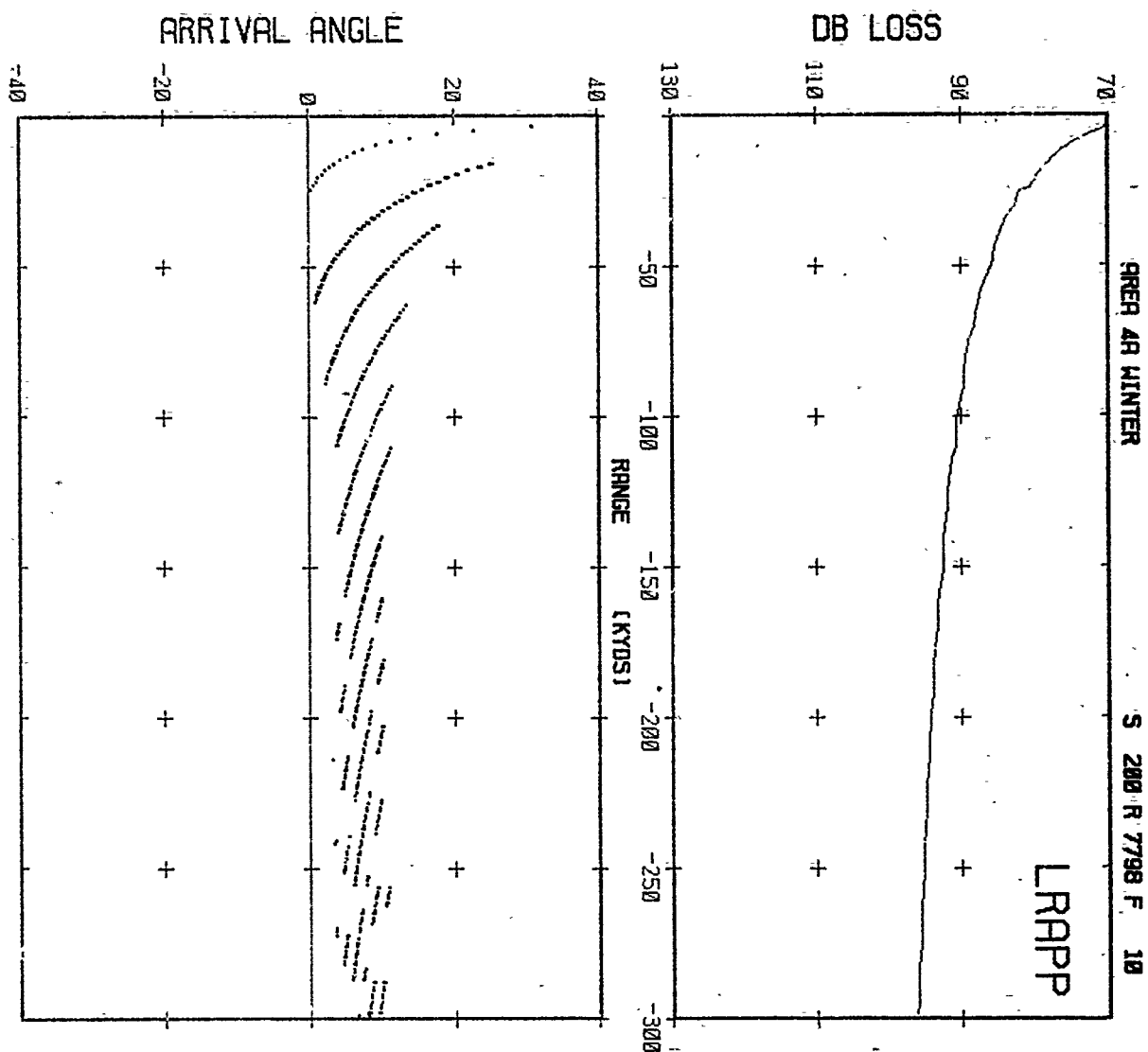


DEPTH IN METERS



NOISE (DB)



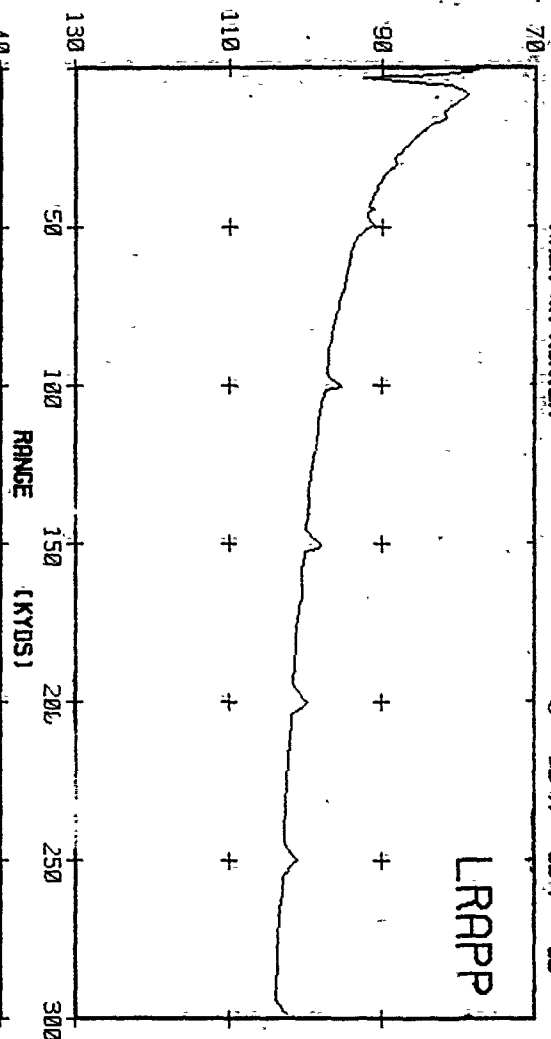


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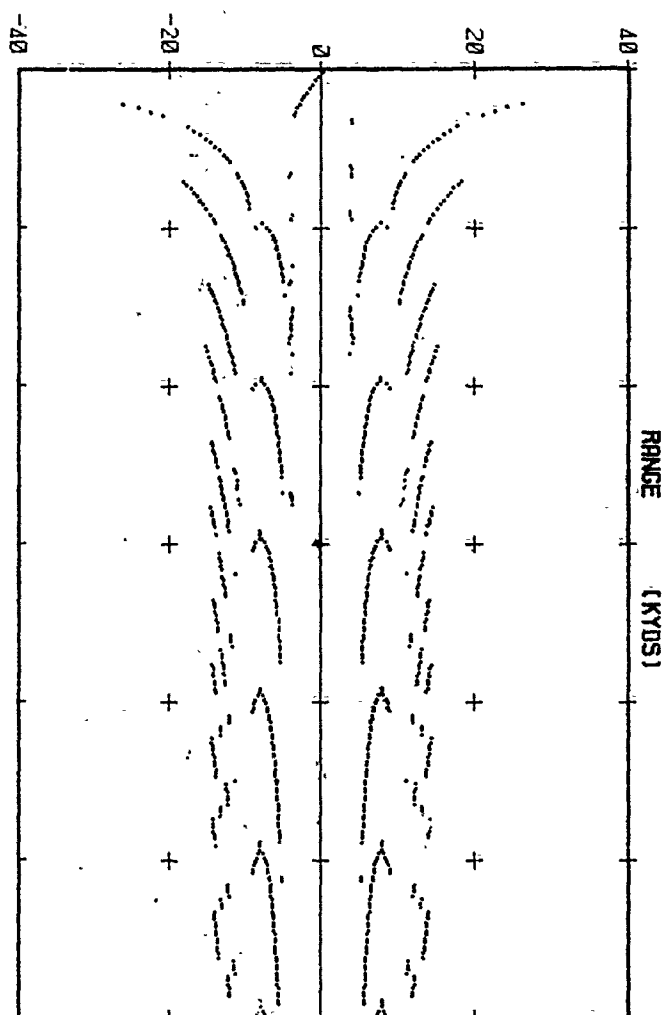
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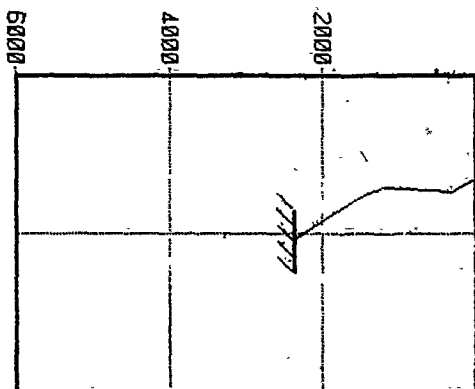
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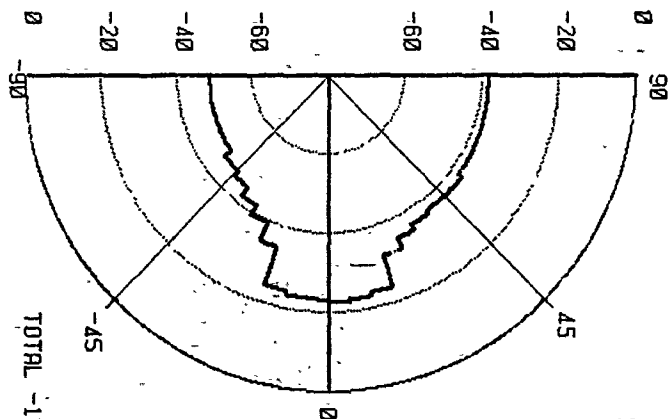
ARRIVAL ANGLE



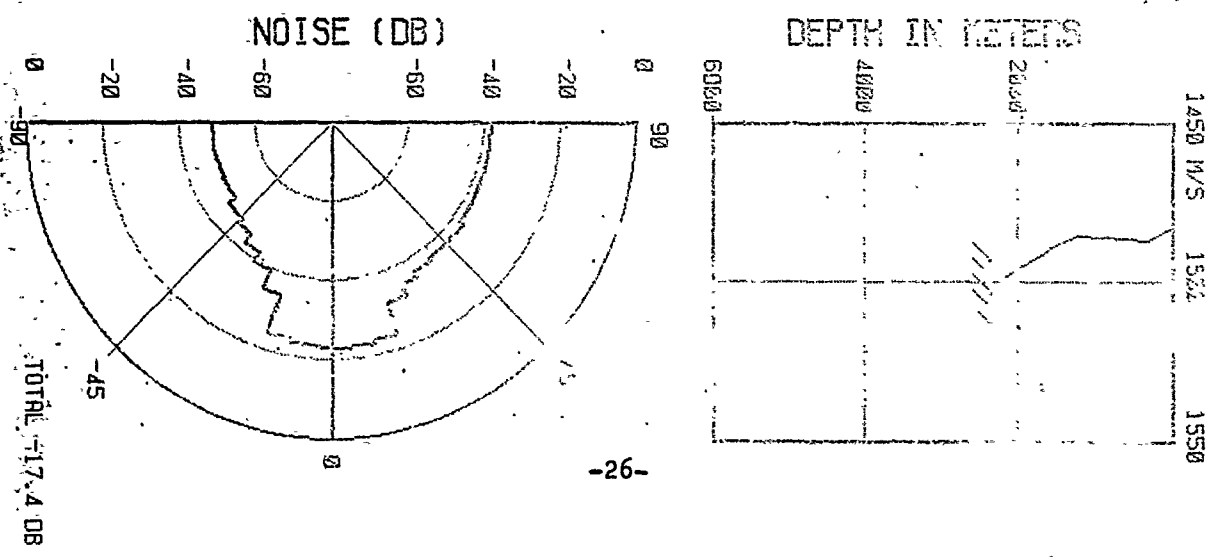
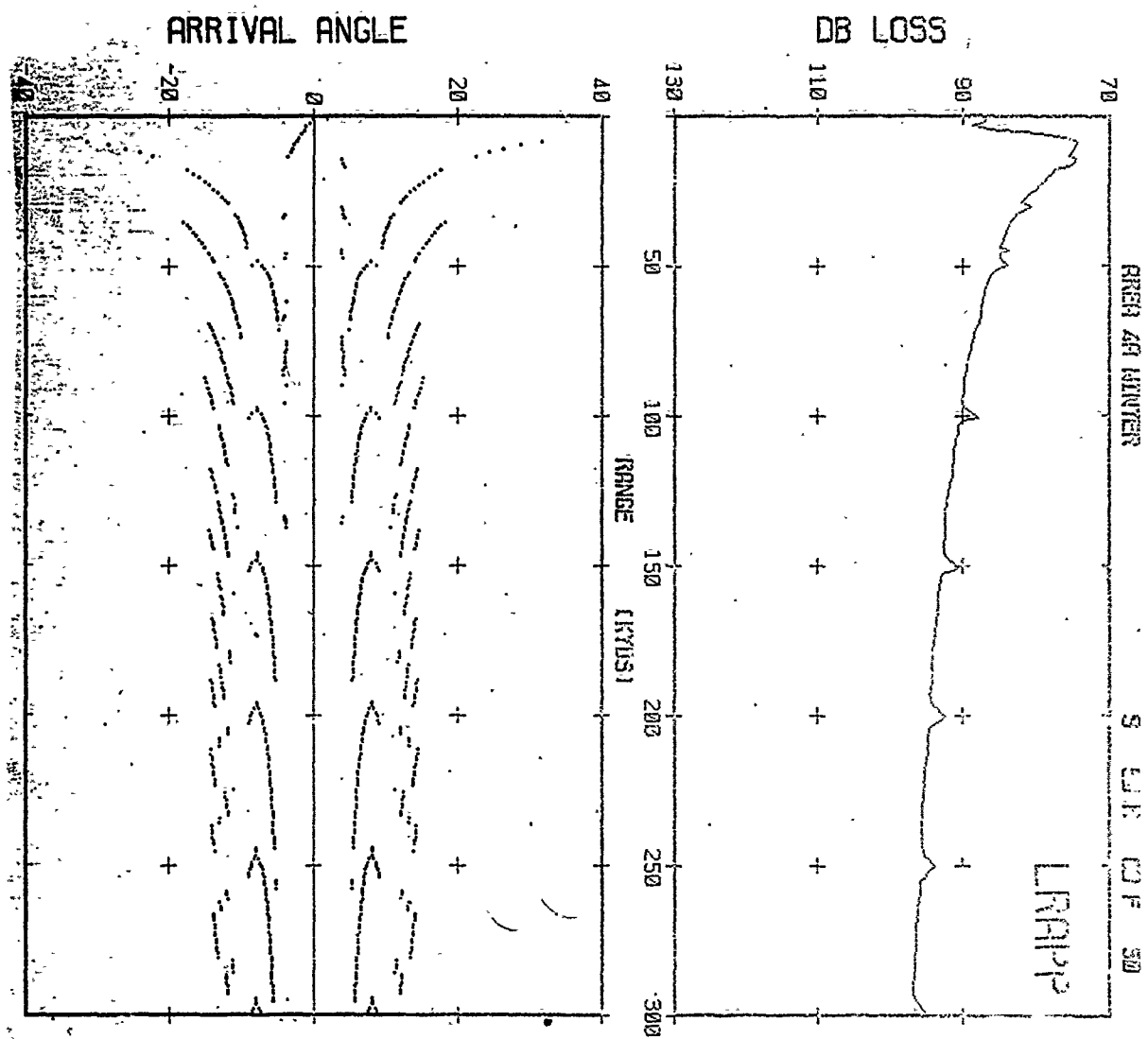
DEPTH IN METERS



NOISE (DB)



TOTAL -17.4 DB

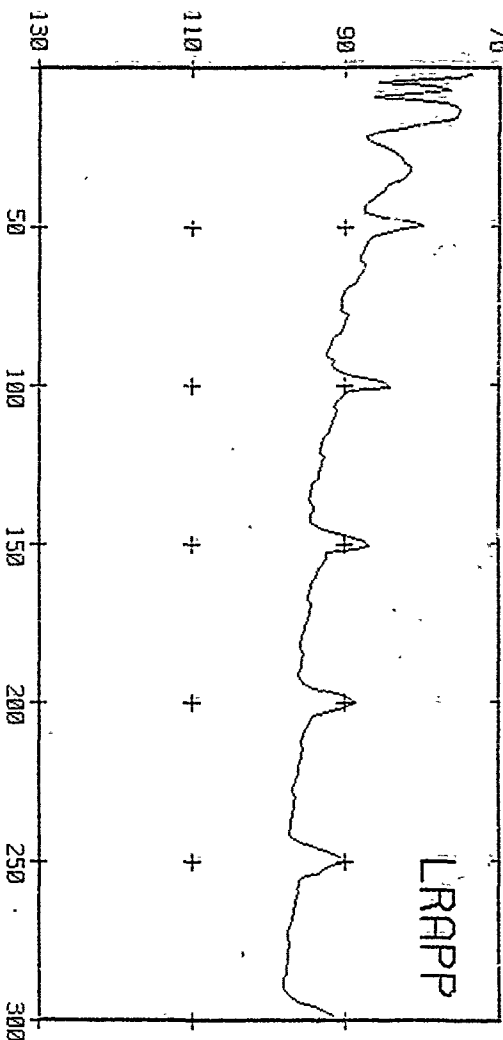


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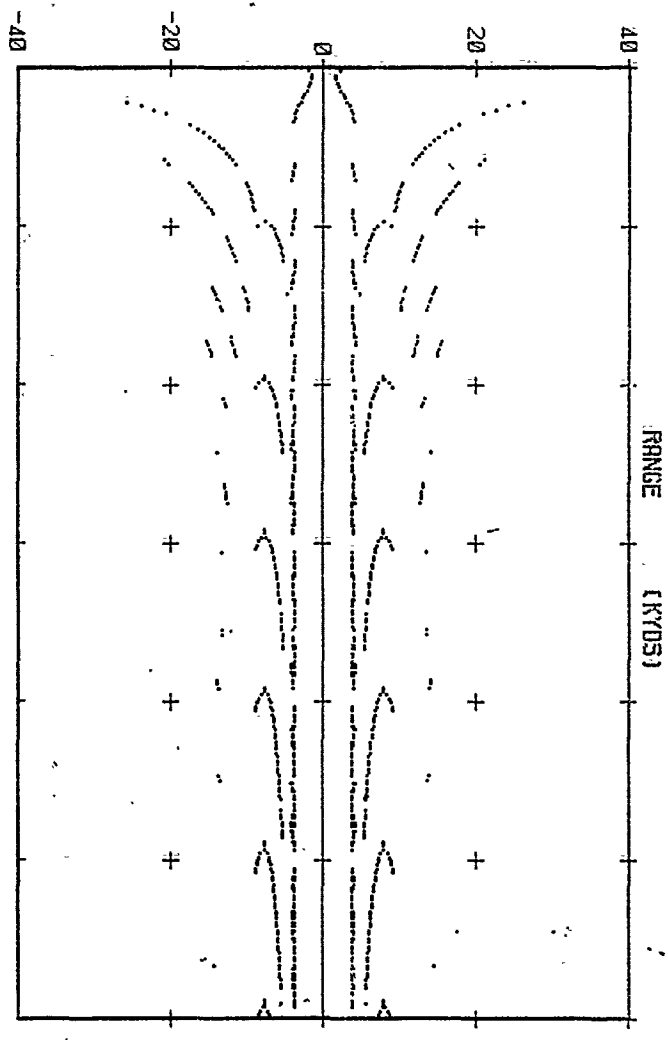
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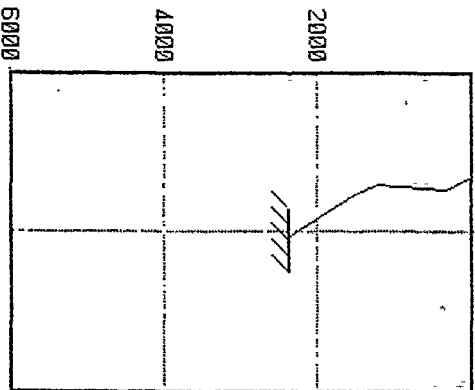
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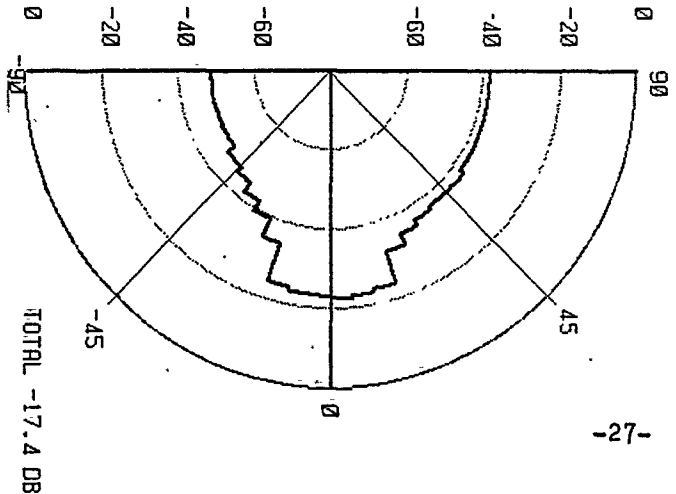
ARRIVAL ANGLE

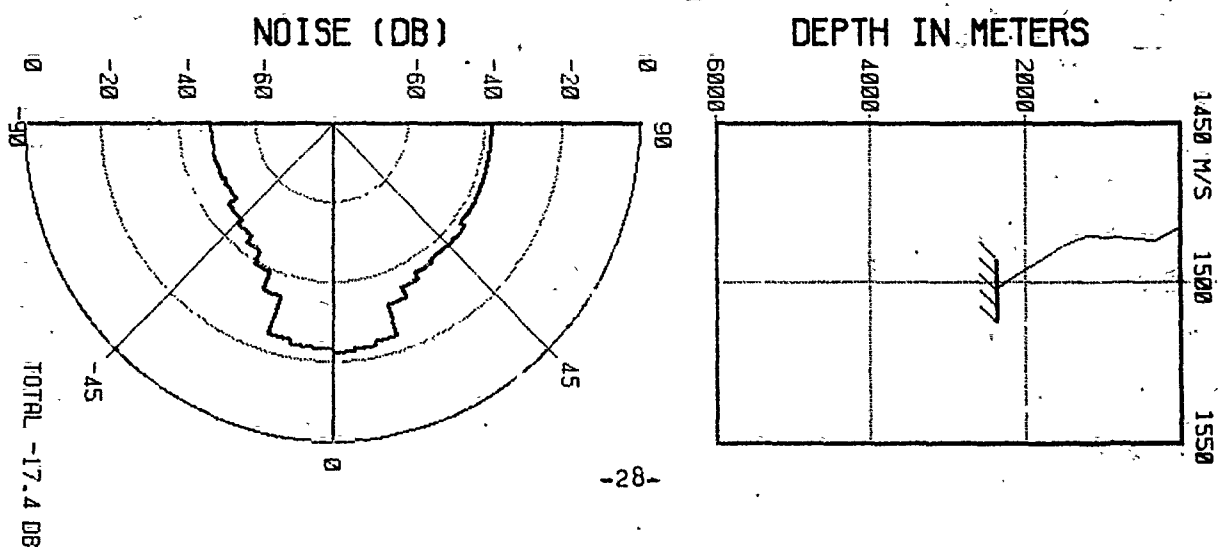
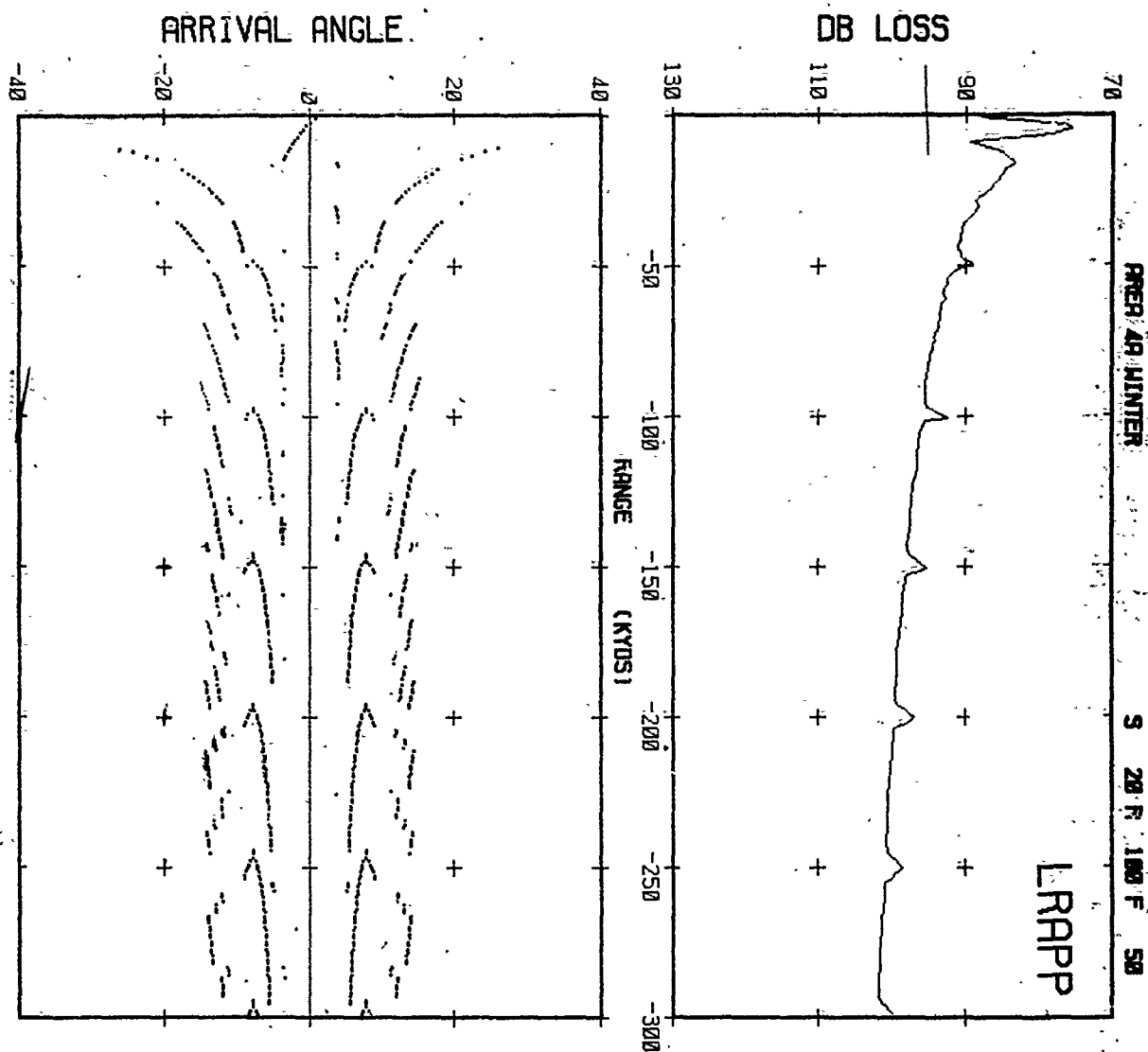


DEPTH IN METERS



NOISE (DB)



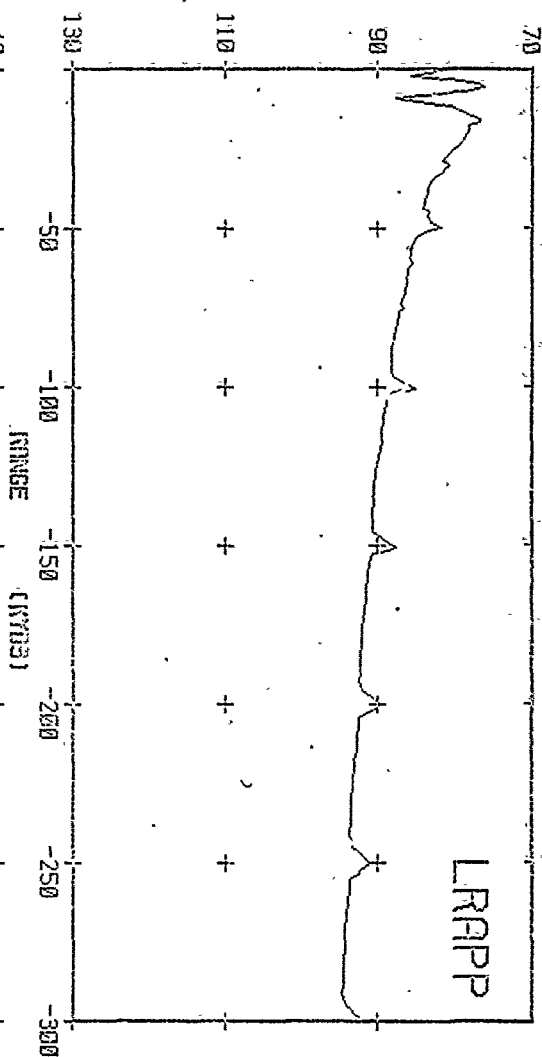


RRR AB WINTER

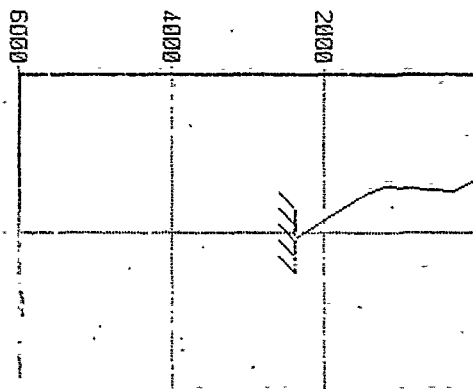
S 50 R 100 F 50

1450 M/S 1500 1550

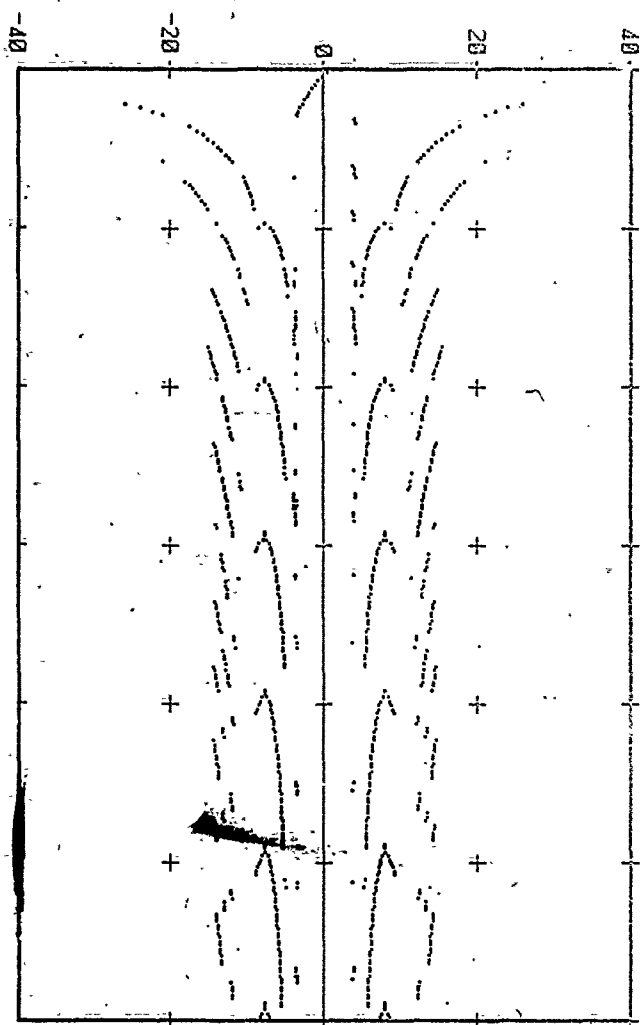
DB LOSS



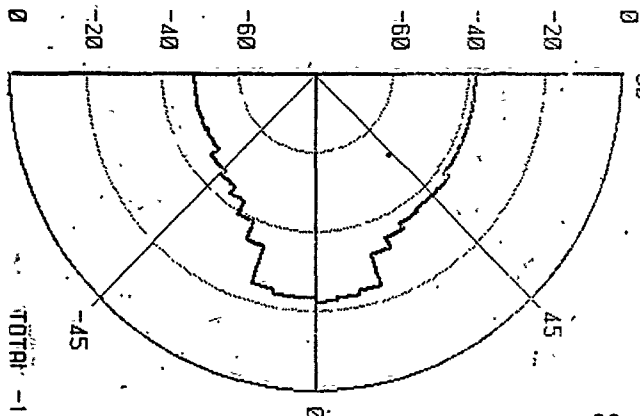
DEPTH IN METERS



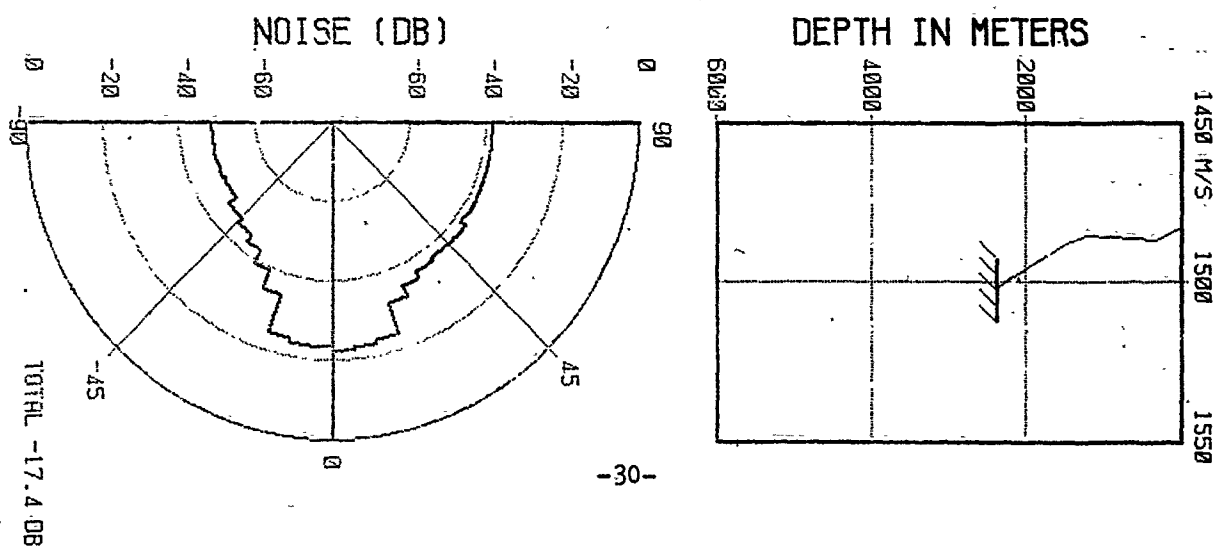
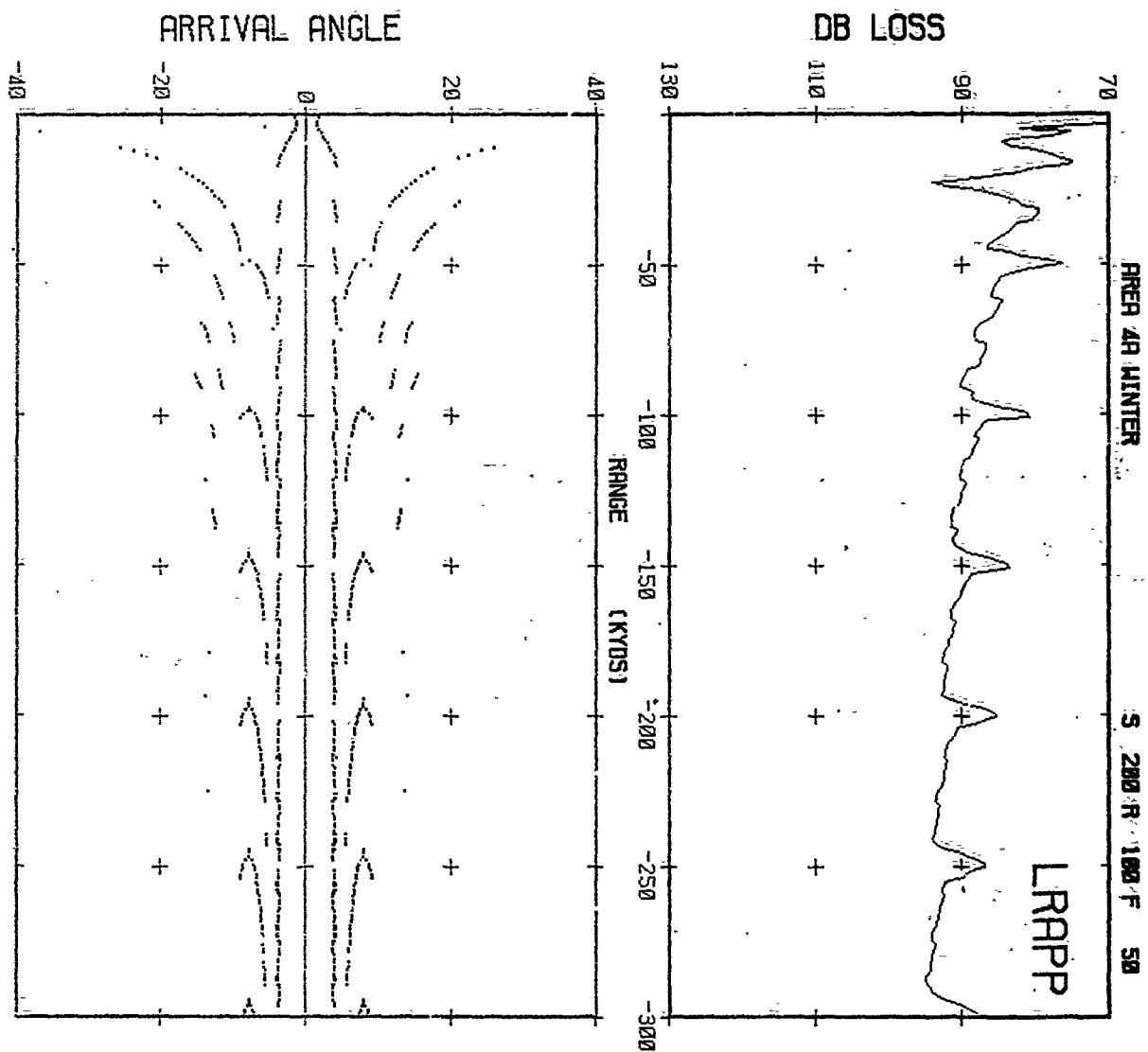
ARRIVAL ANGLE



NOISE (DB)



TOTAL -17.4 NR

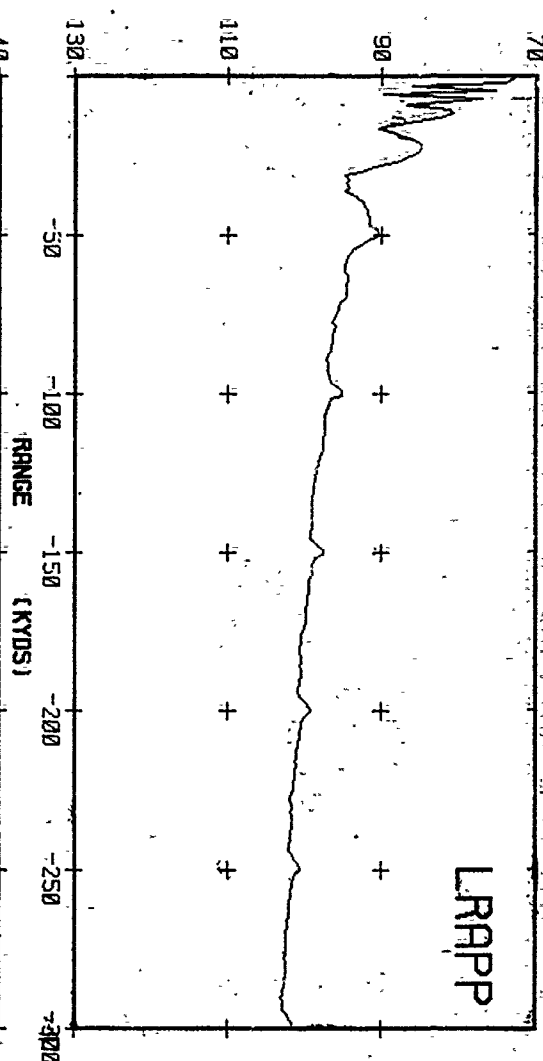


AREA 4R WINTER

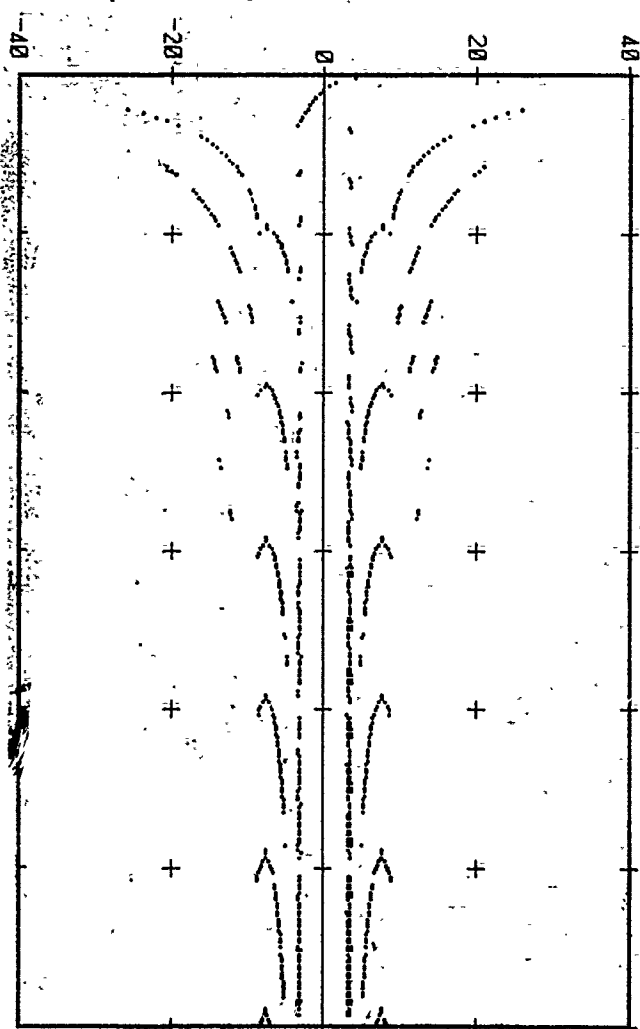
S 20 R 300 F 50

LRAPP

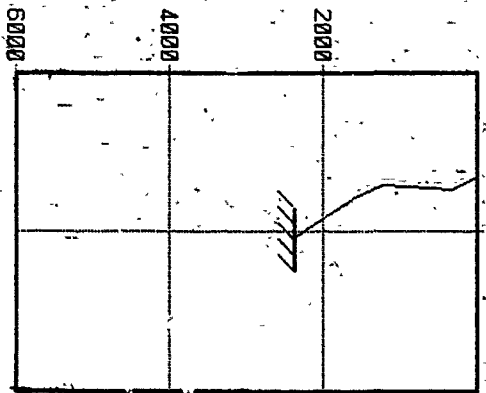
DB LOSS



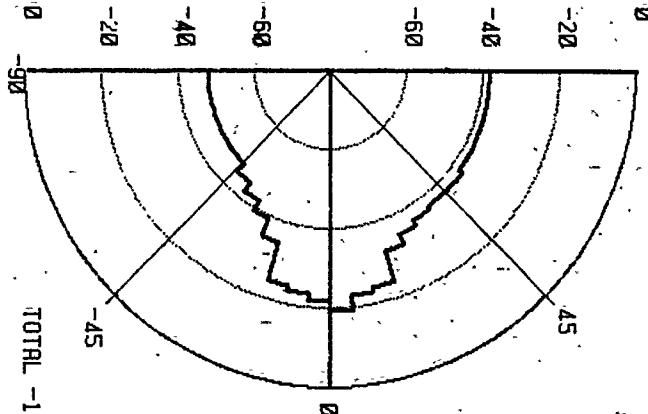
ARRIVAL ANGLE



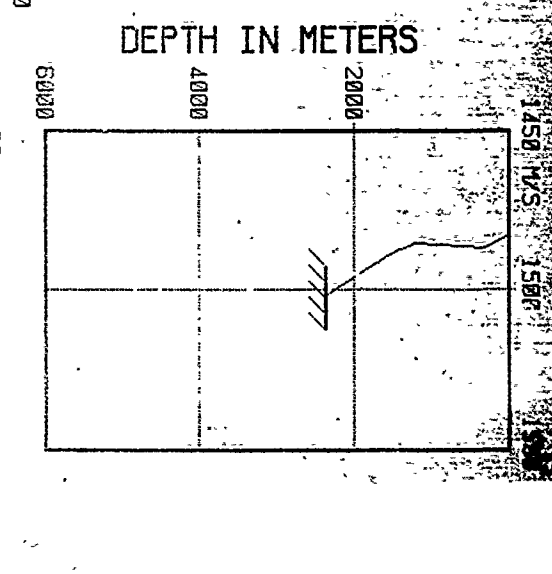
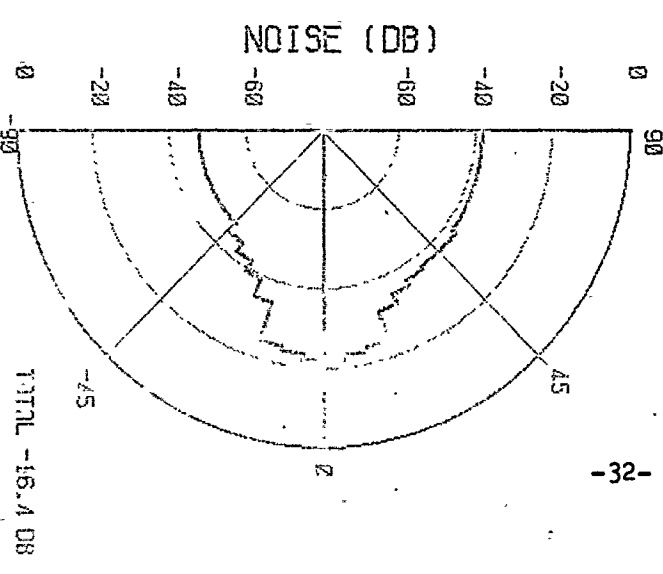
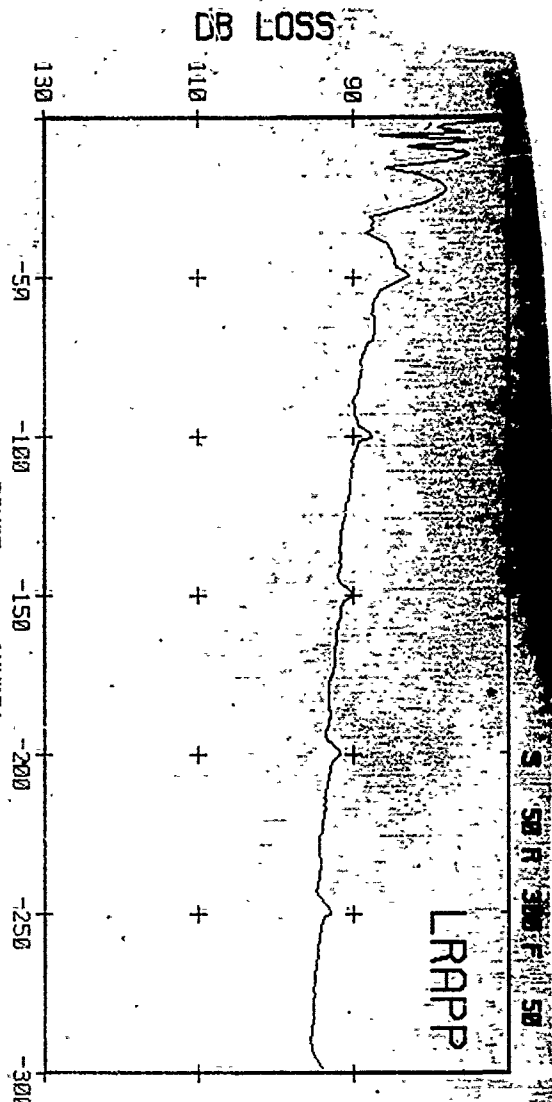
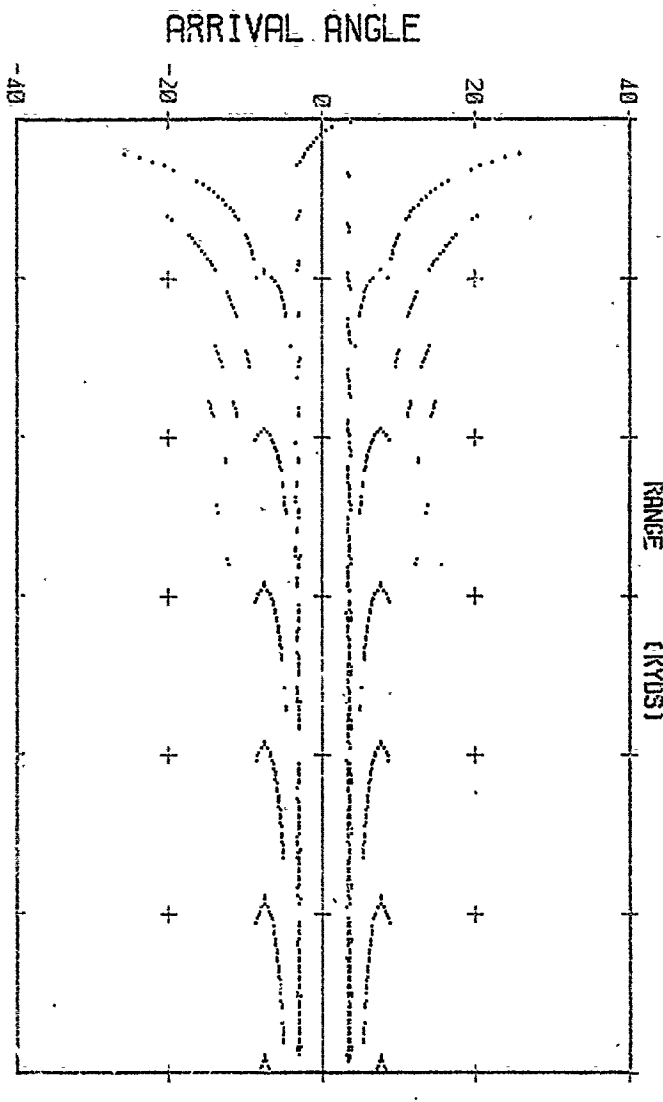
DEPTH IN METERS



NOISE (DB)



TOTRL -16.4 DB

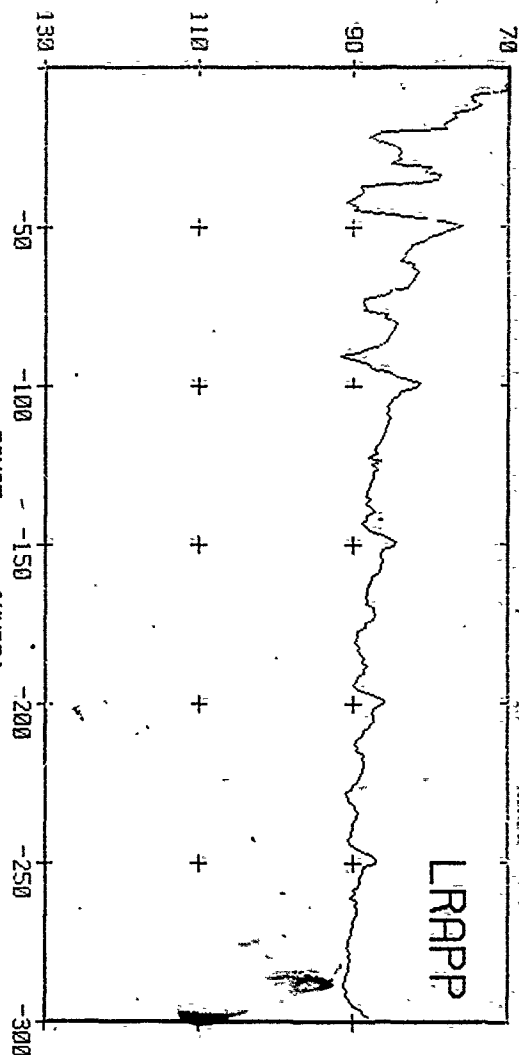


AREA 4R WINTER

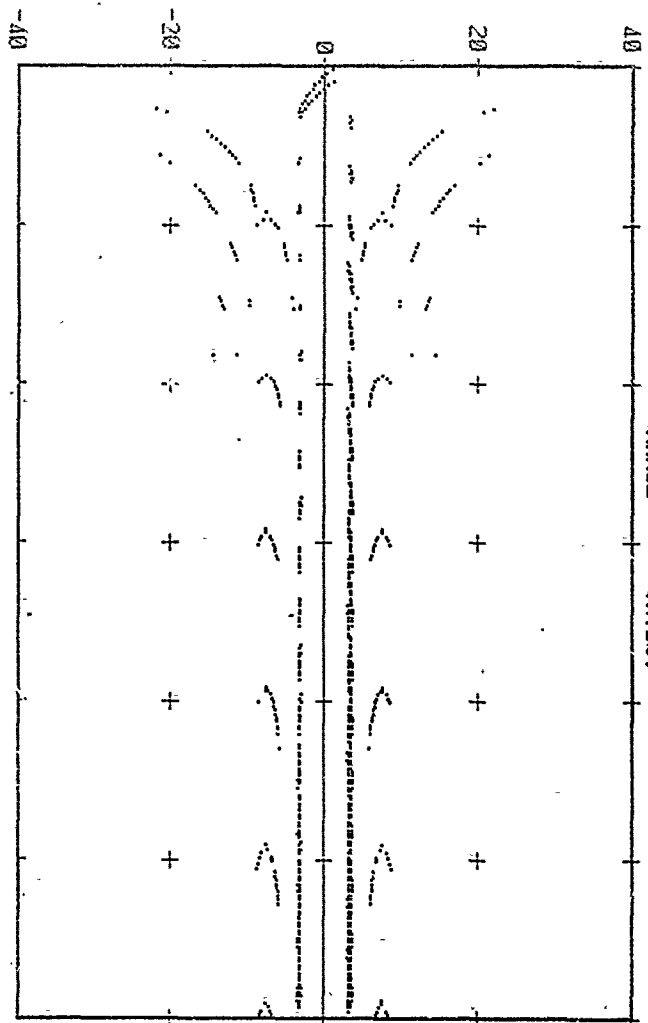
S 200 R 300 F 50

1450 M/S 1500 1550

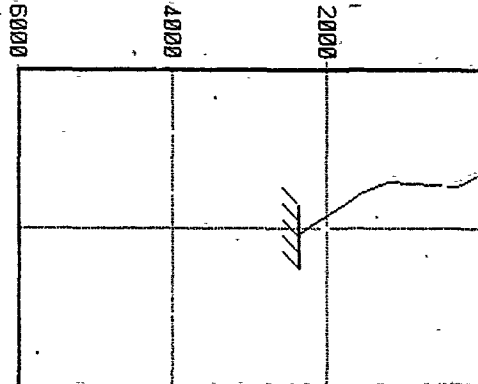
DB LOSS



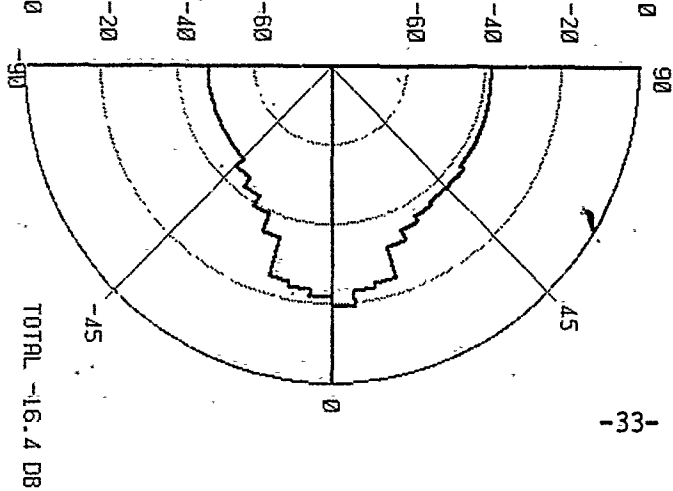
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

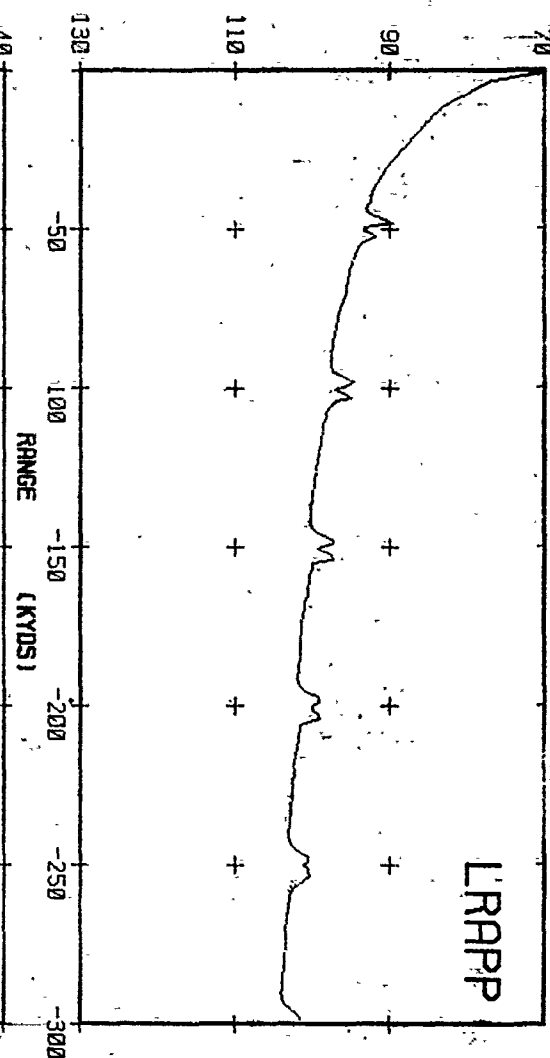


AREA 40 WINTER

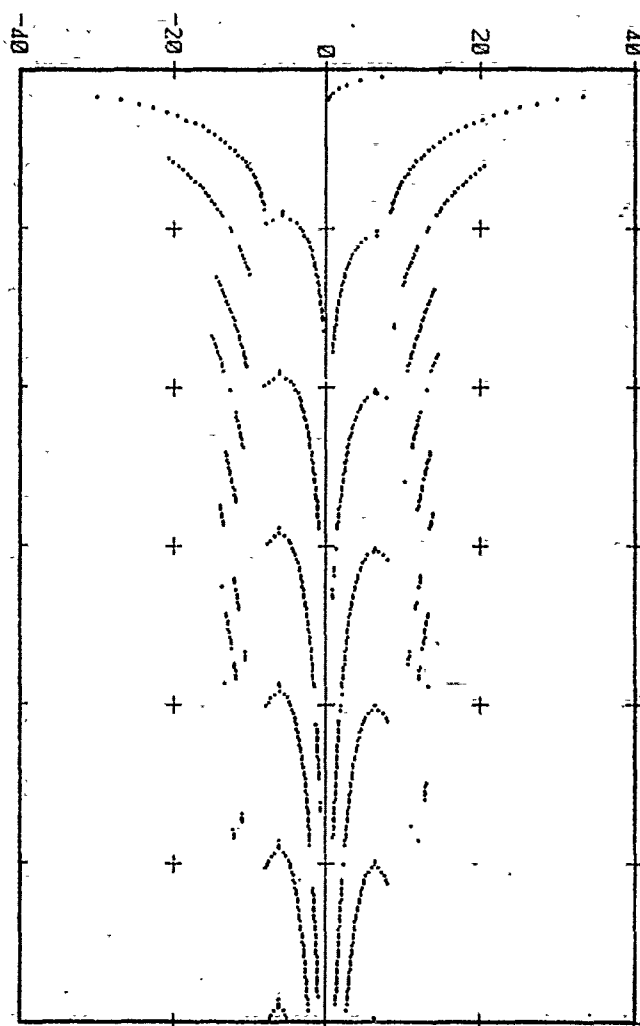
S 20 R 1000 F 50

1450 M/S 1500 1550

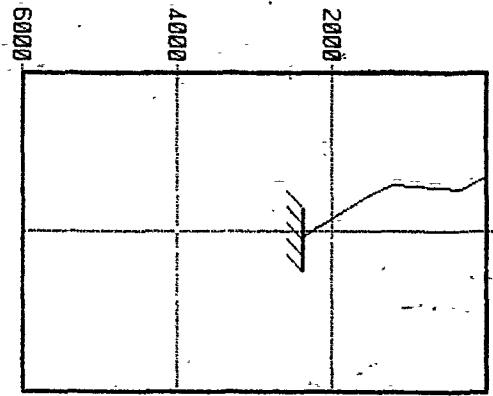
DB LOSS



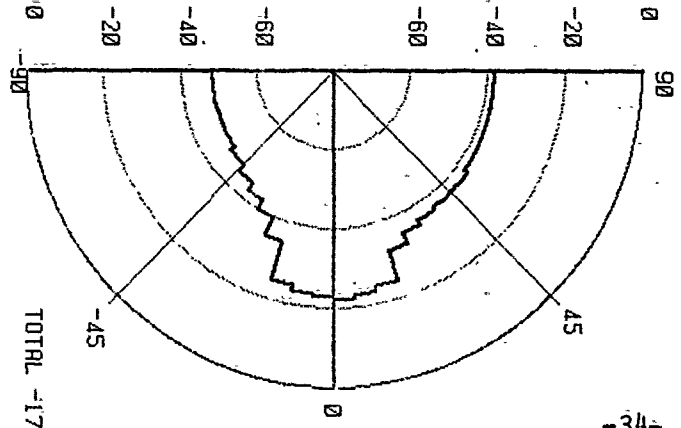
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

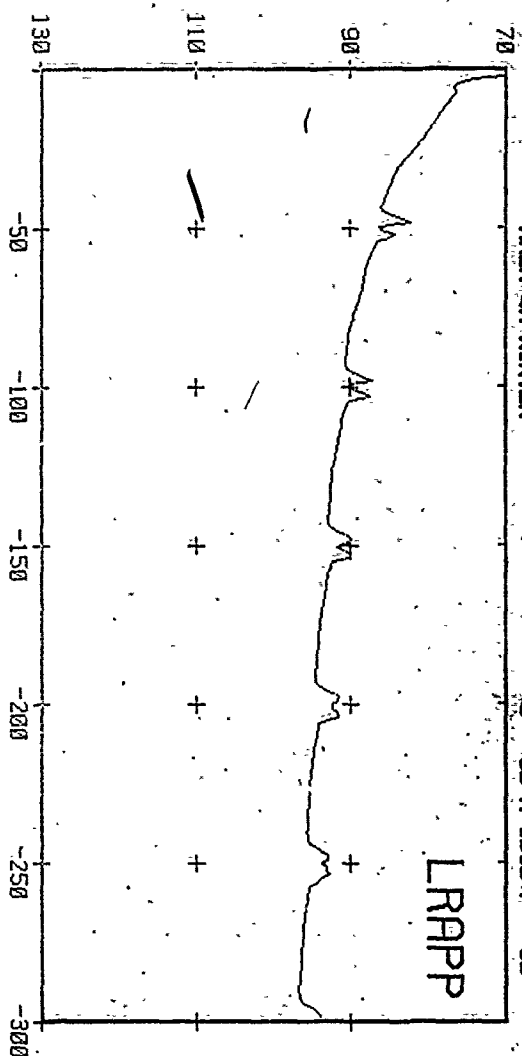


AREA 49 WINTER

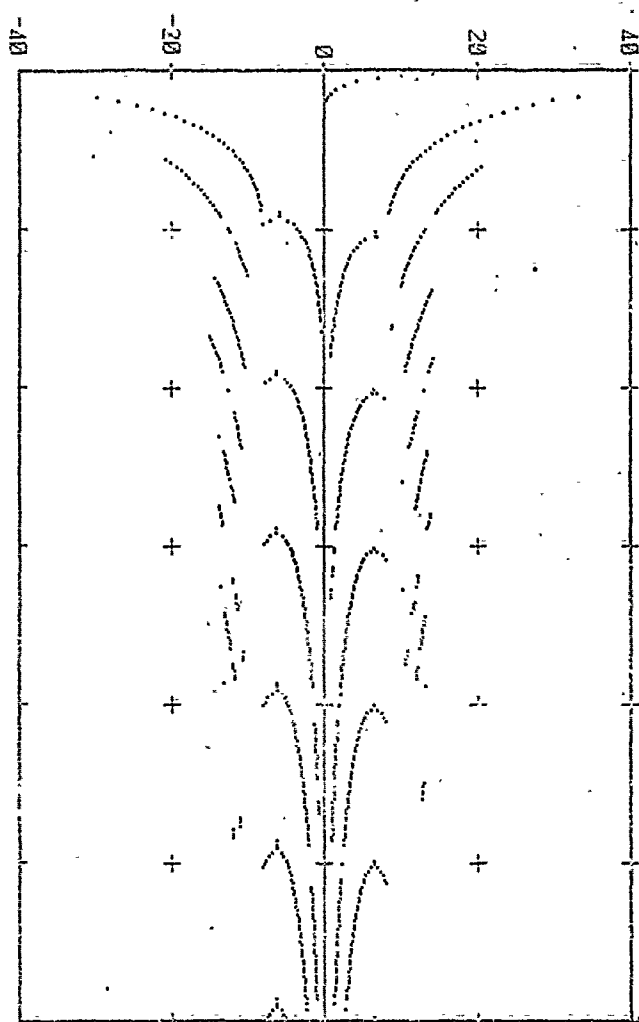
50 R 1000 F 50

1450 M/S 1500 1550

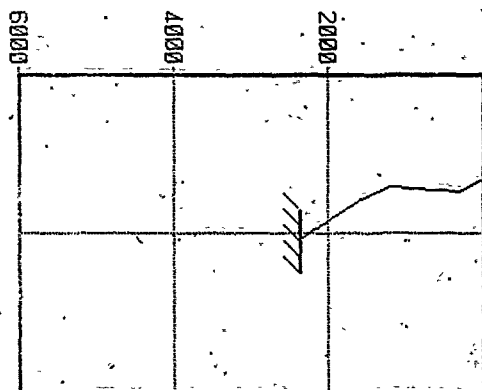
DB LOSS



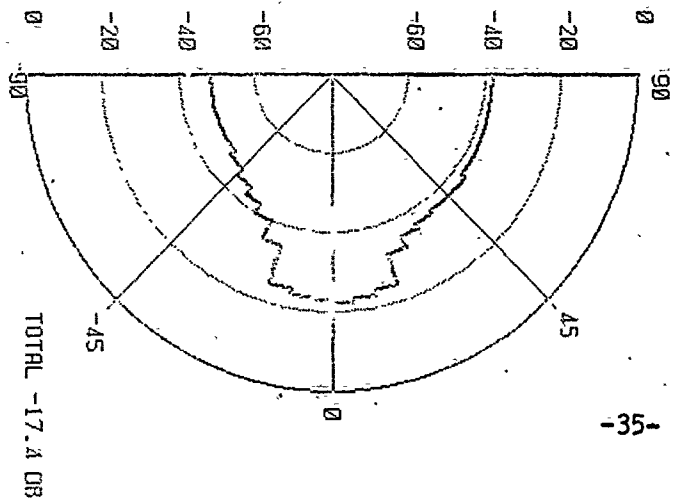
ARRIVAL ANGLE

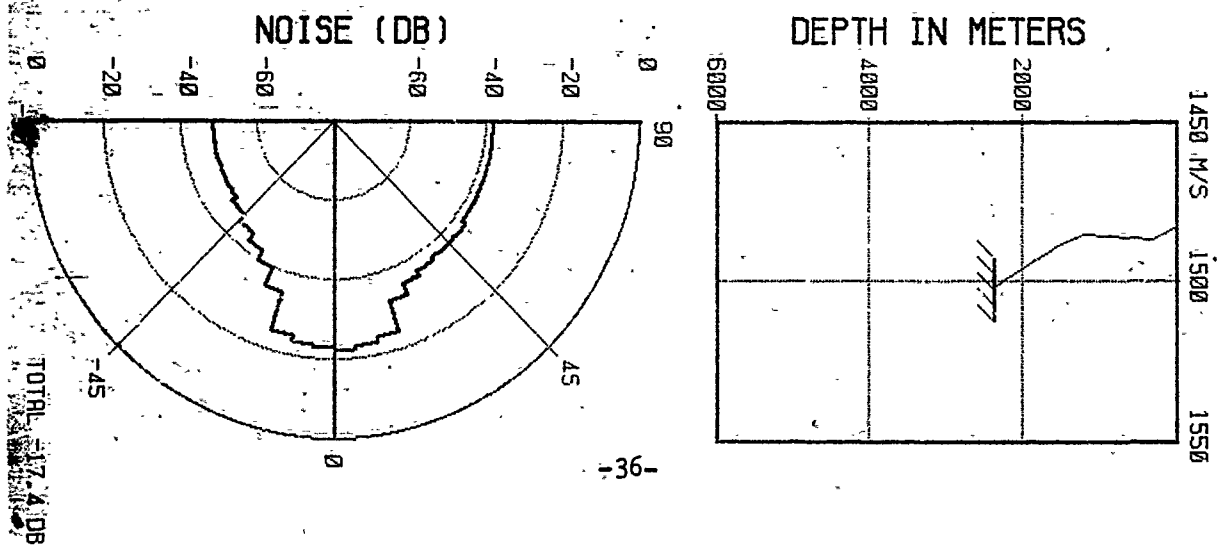
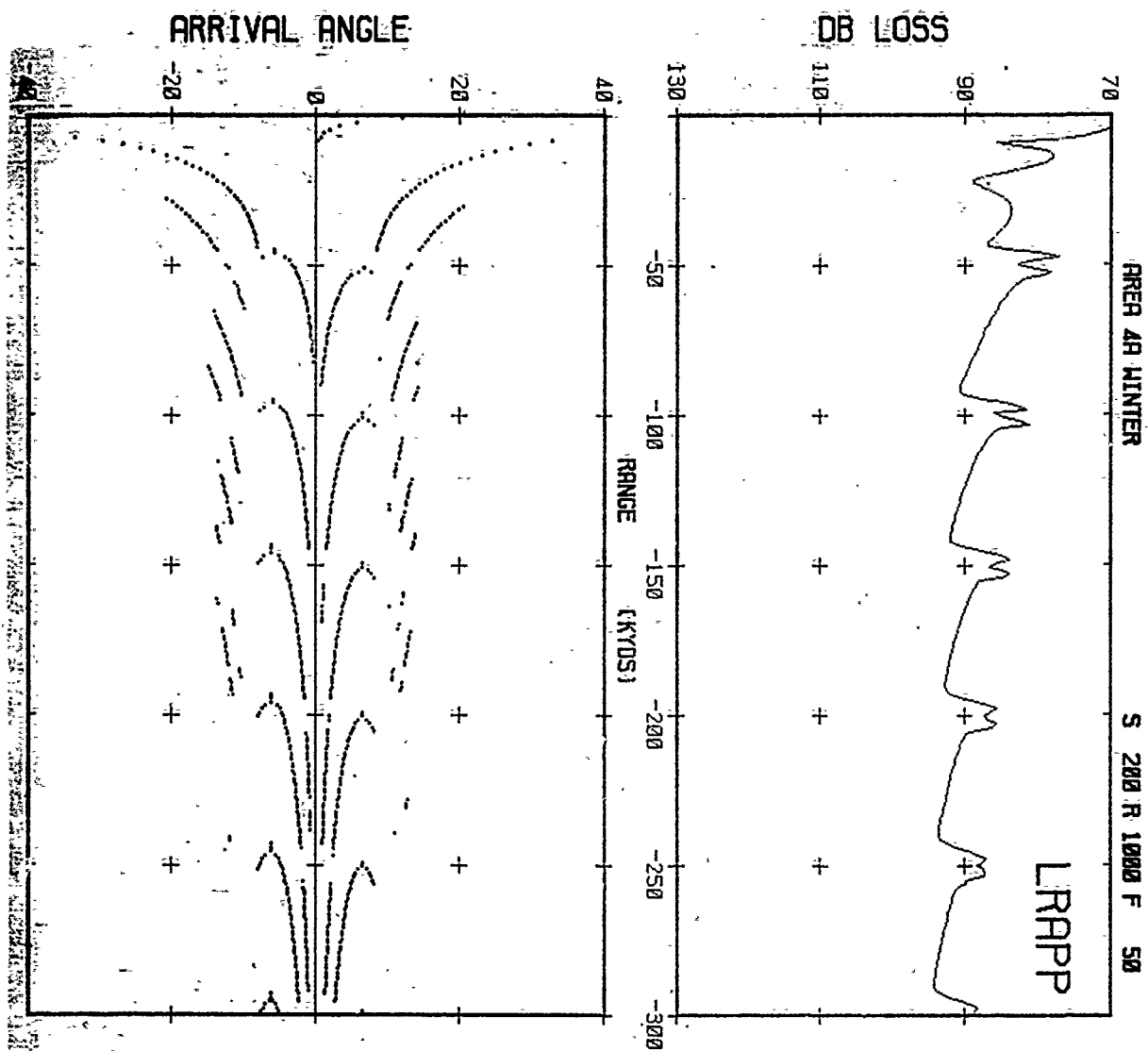


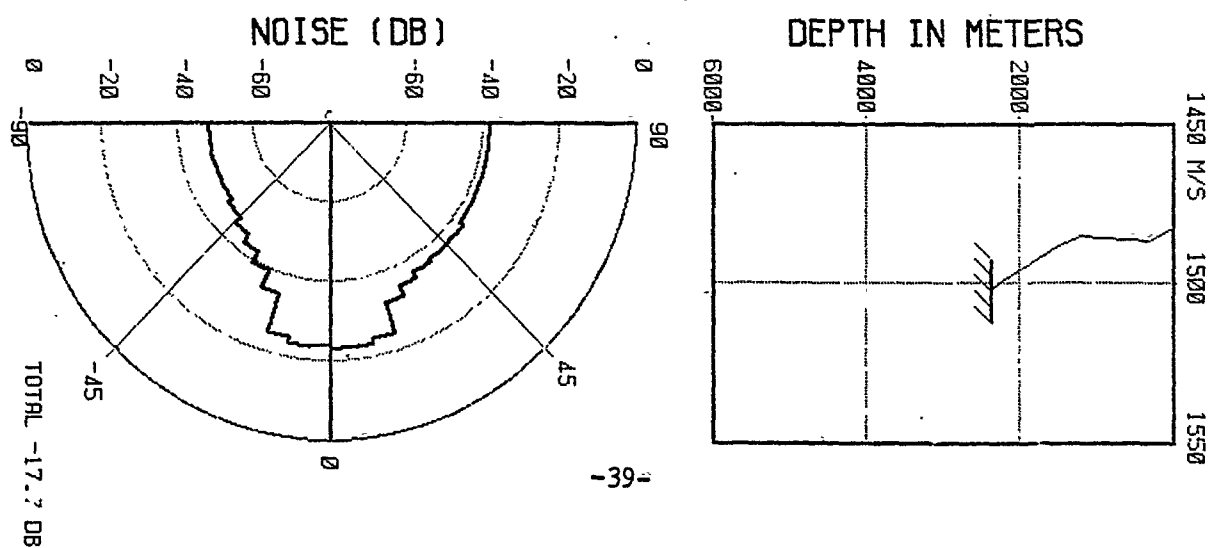
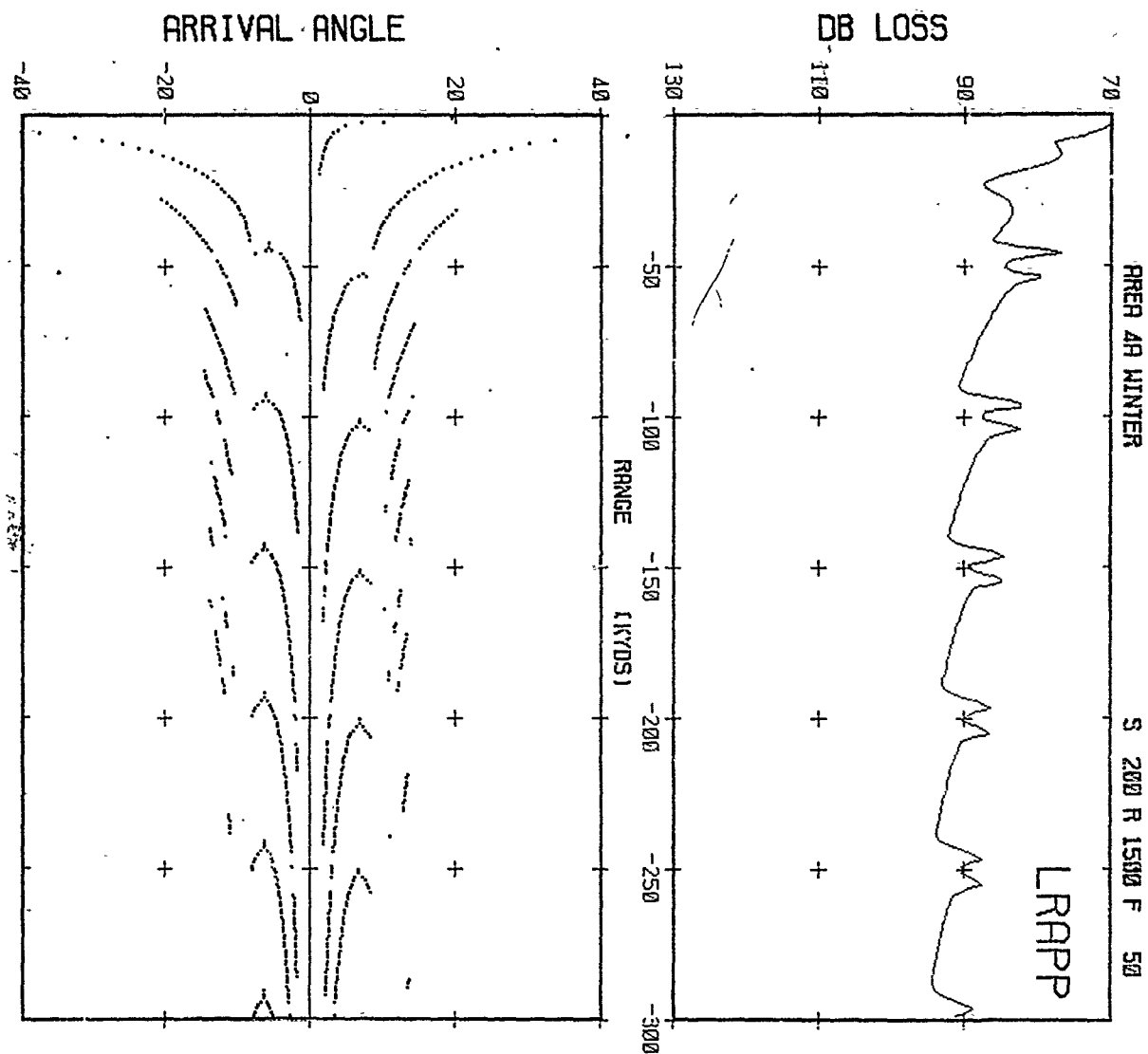
DEPTH IN METERS

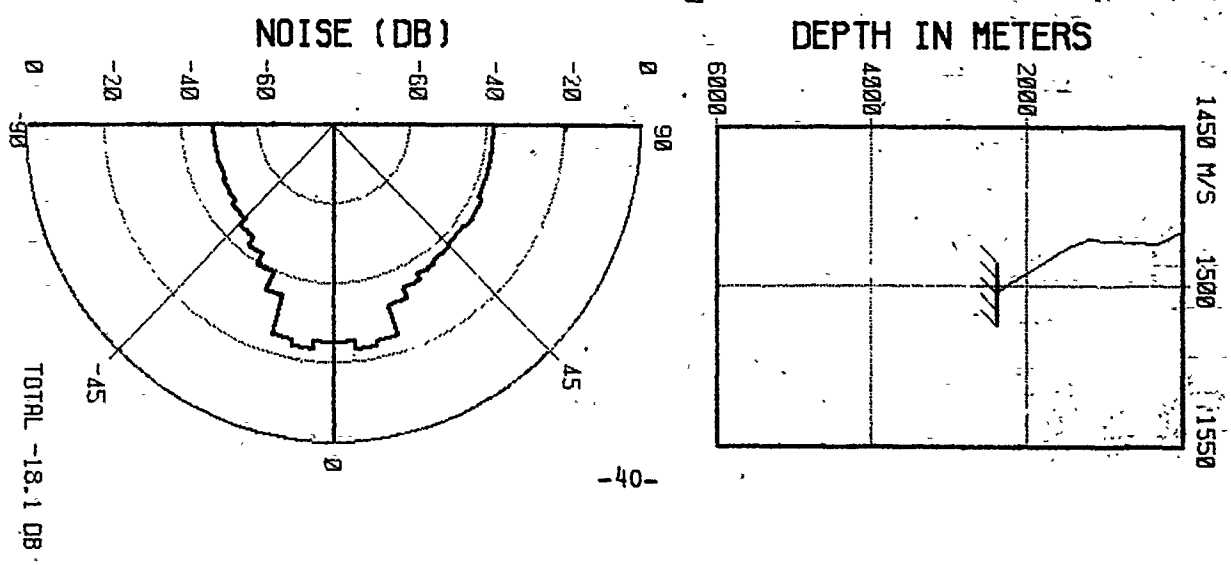
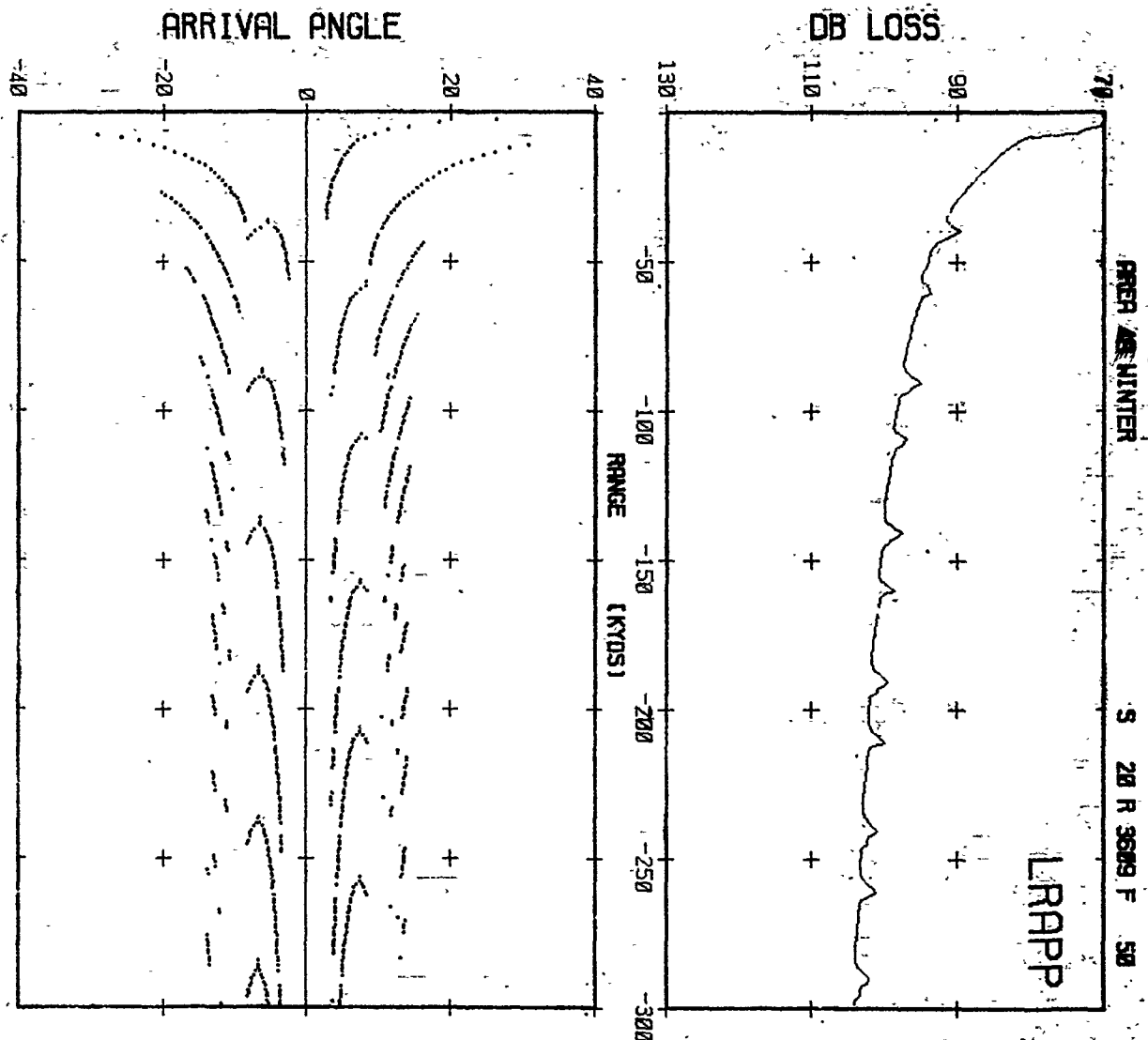


NOISE (DB)







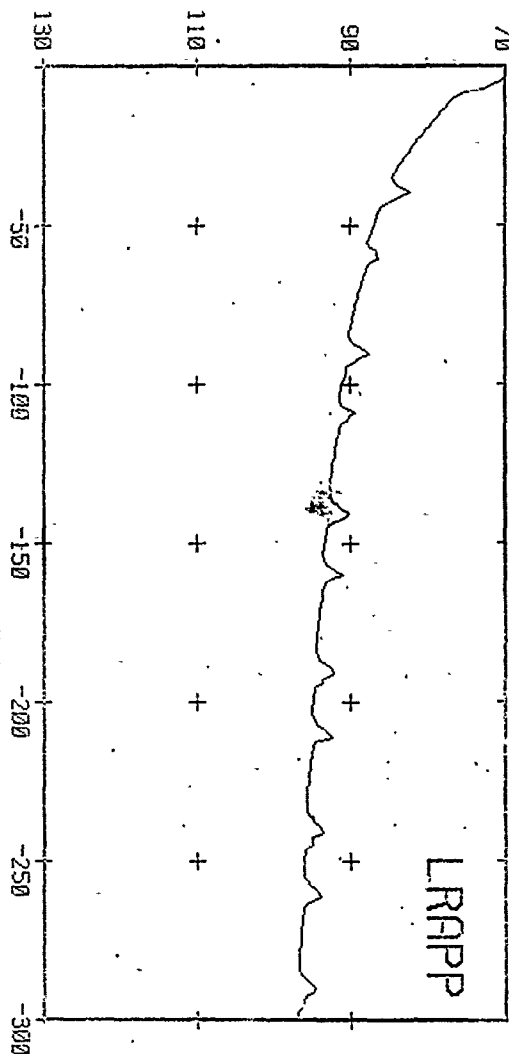


RPER 4R WINTER

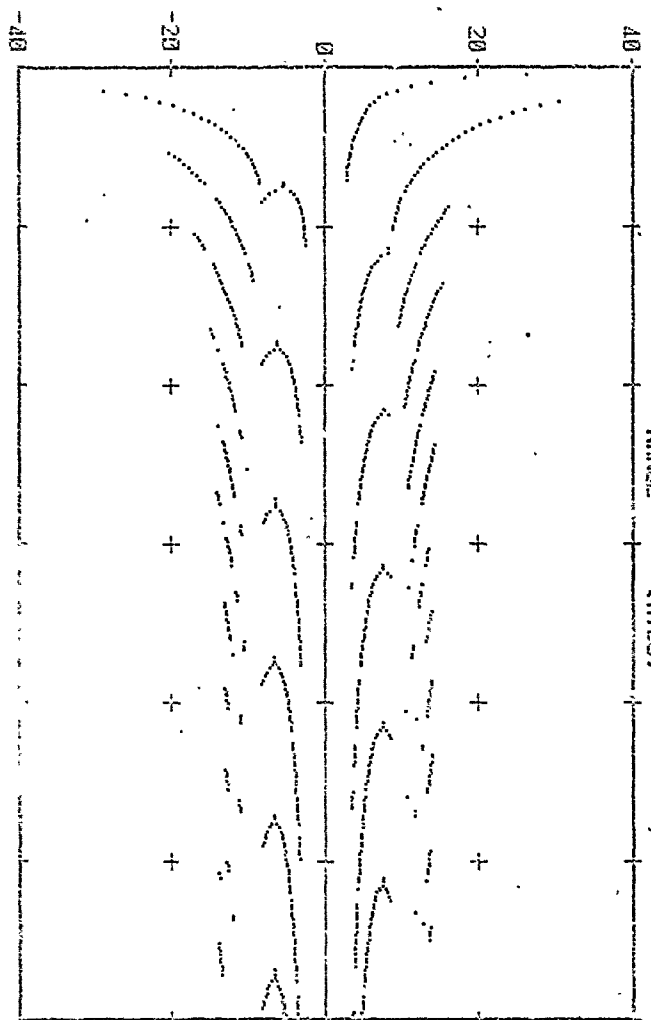
S 50 R 3000 F 50

1450 M/S 1500 1550

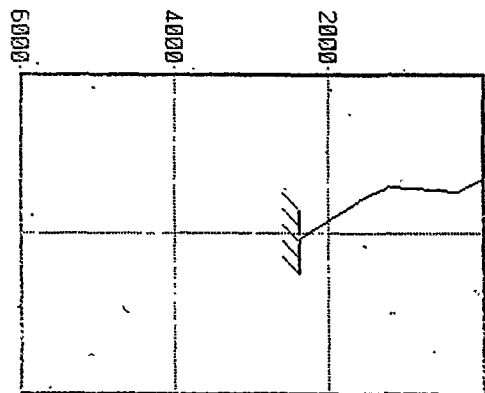
DB LOSS



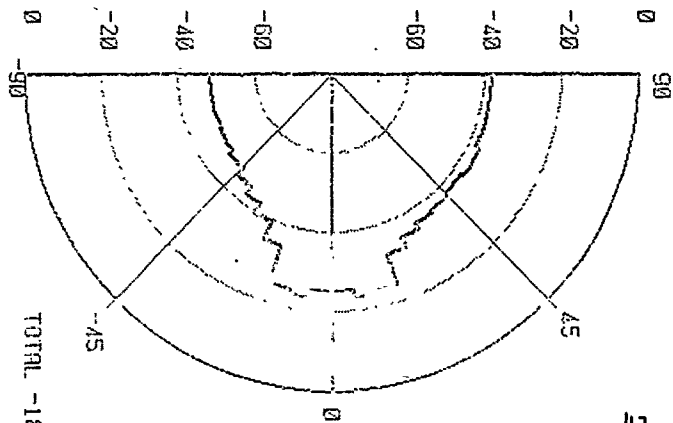
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



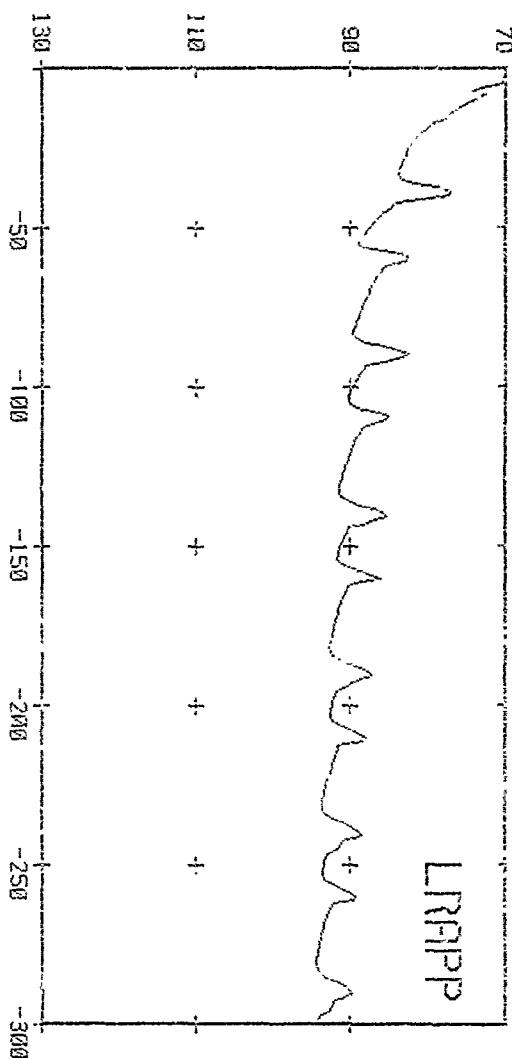
TOTAL -18.1 DB

FREE AIR WINTER

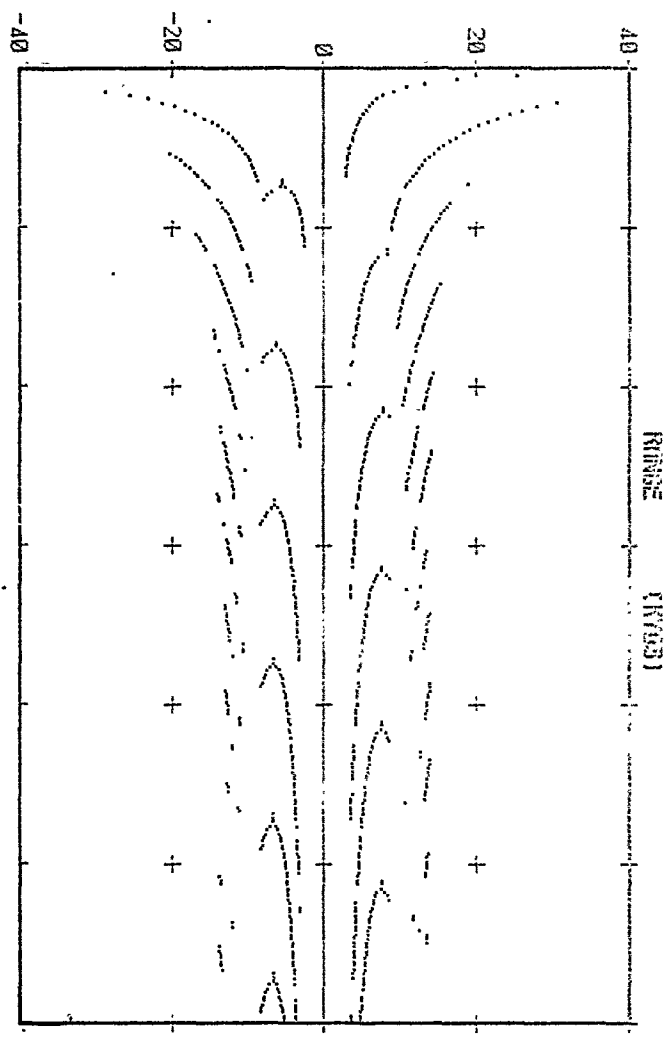
S 220 N 3000 F 50

LRRPP

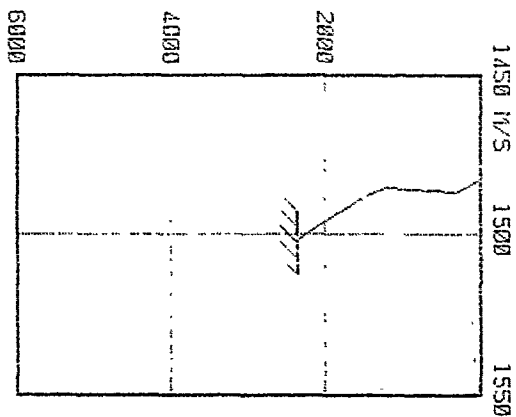
DB LOSS



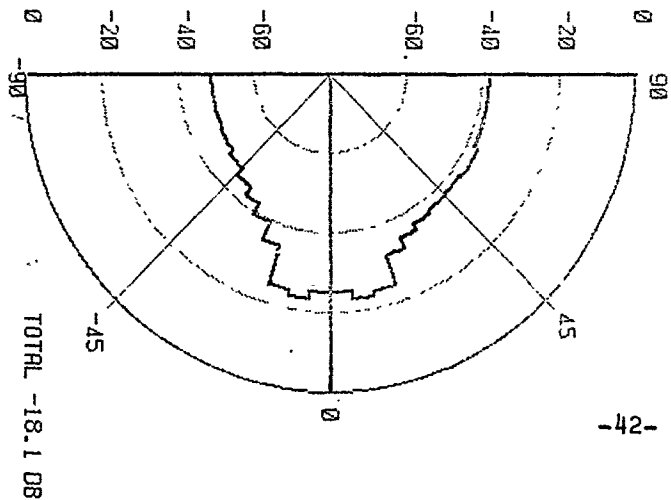
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

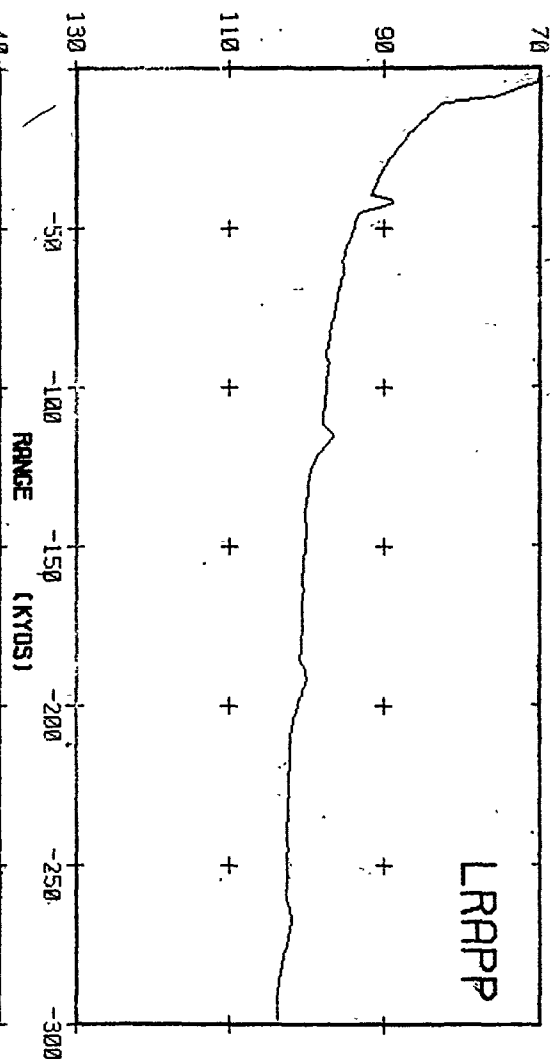


AREA 4A WINTER

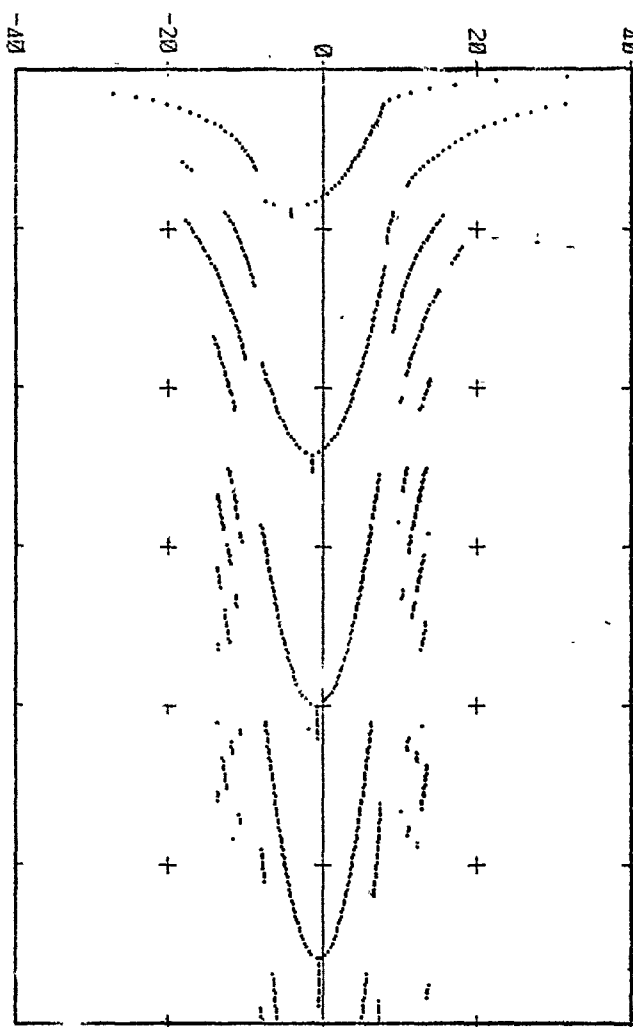
S 20 R 4593 F 50

1450 M/S 1500 1550

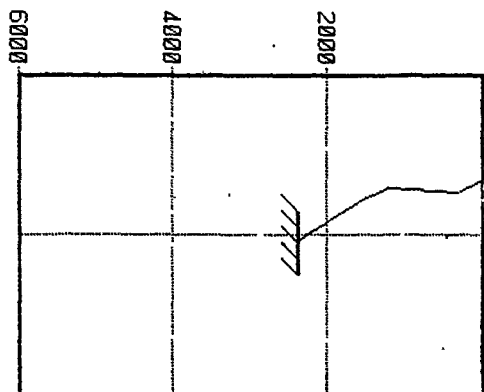
DB LOSS



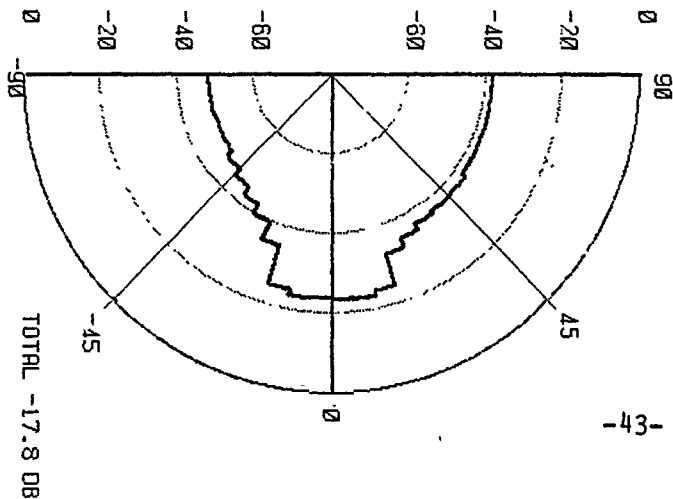
ARRIVAL ANGLE



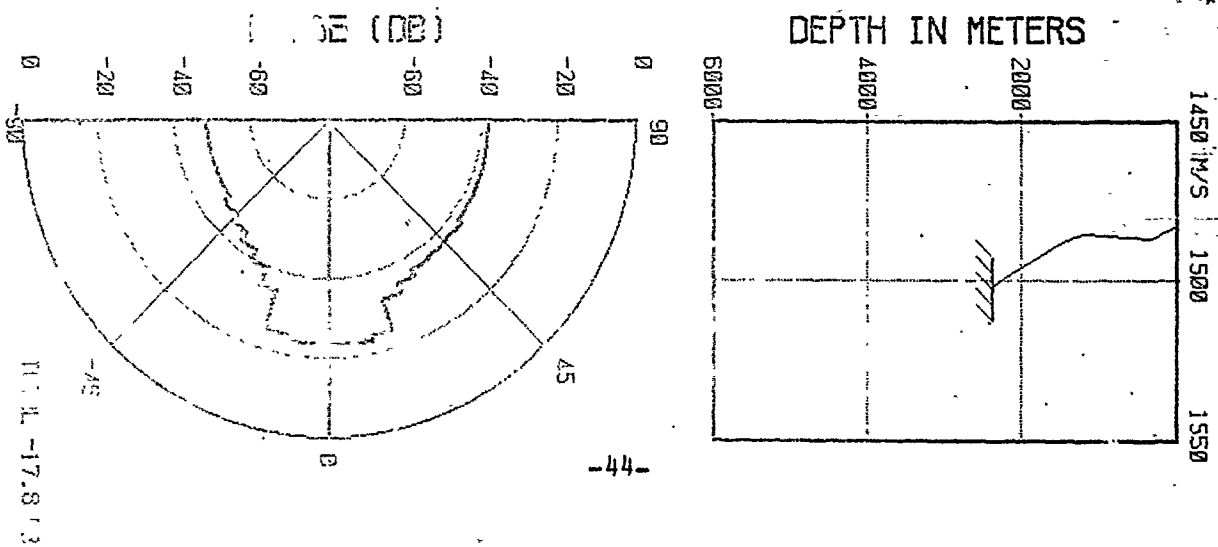
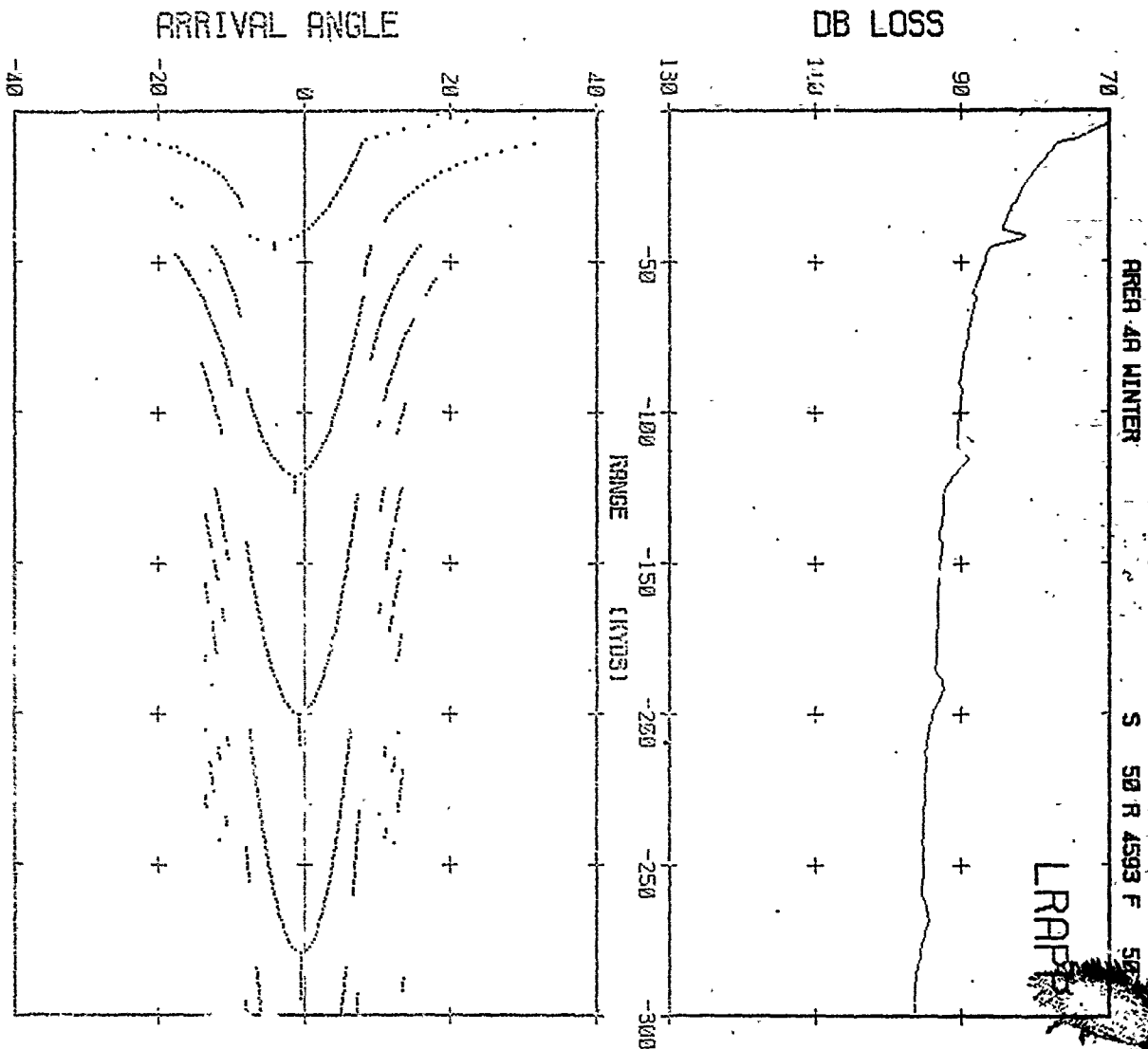
DEPTH IN METERS



NOISE (DB)



0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99



PREA AIR WINTER

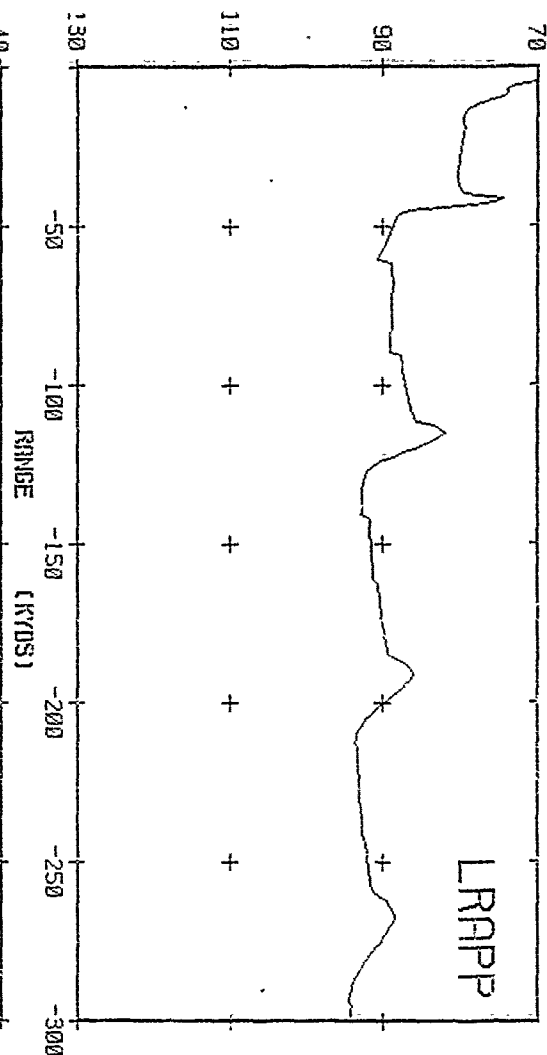
S 250 R 4503 F 50

1450 M/S

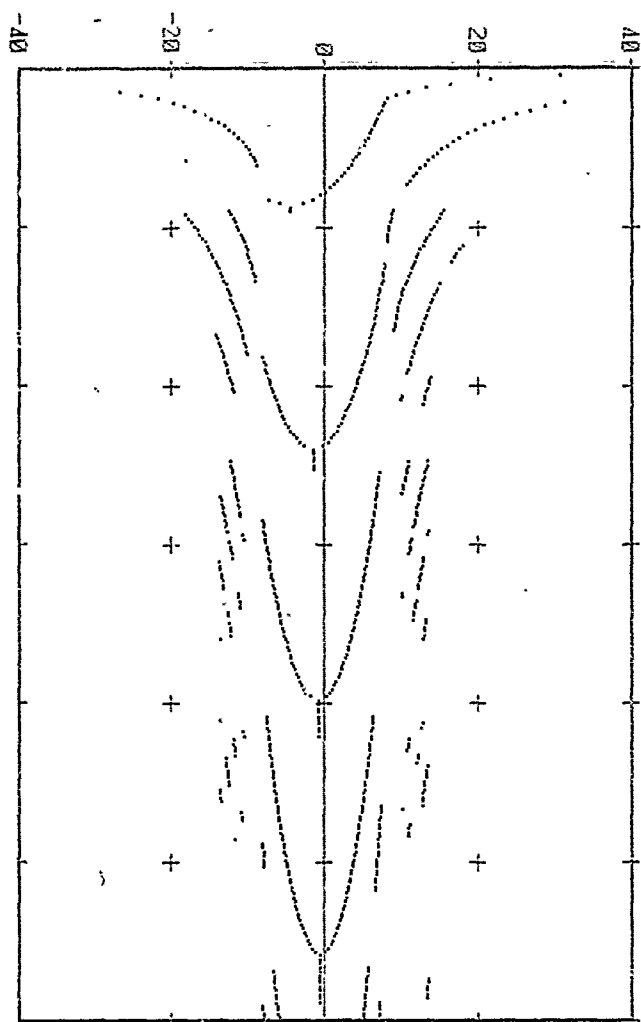
1500

1550

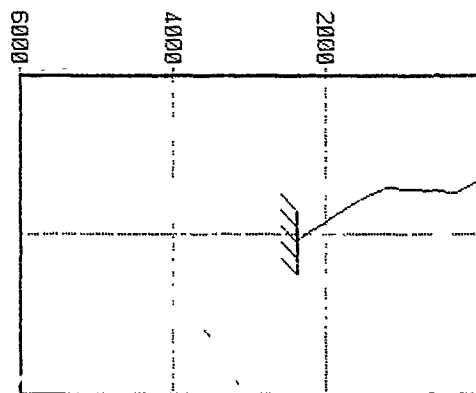
DB LOSS



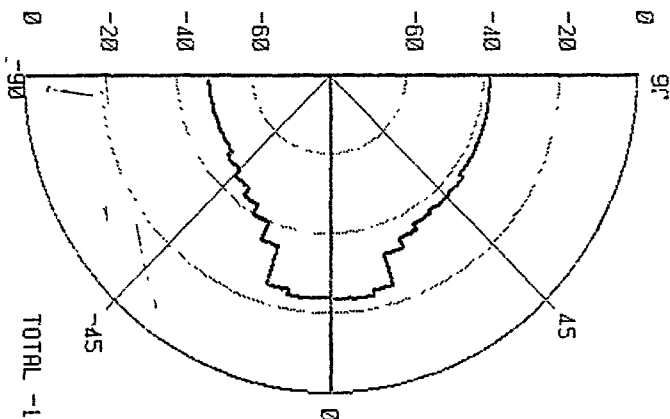
ARRIVAL ANGLE



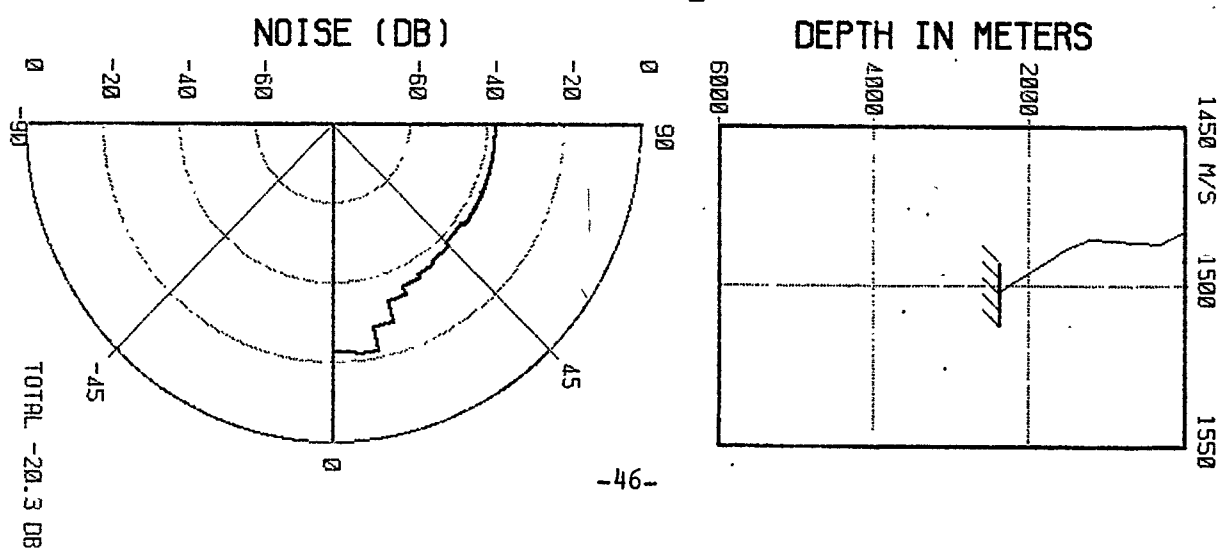
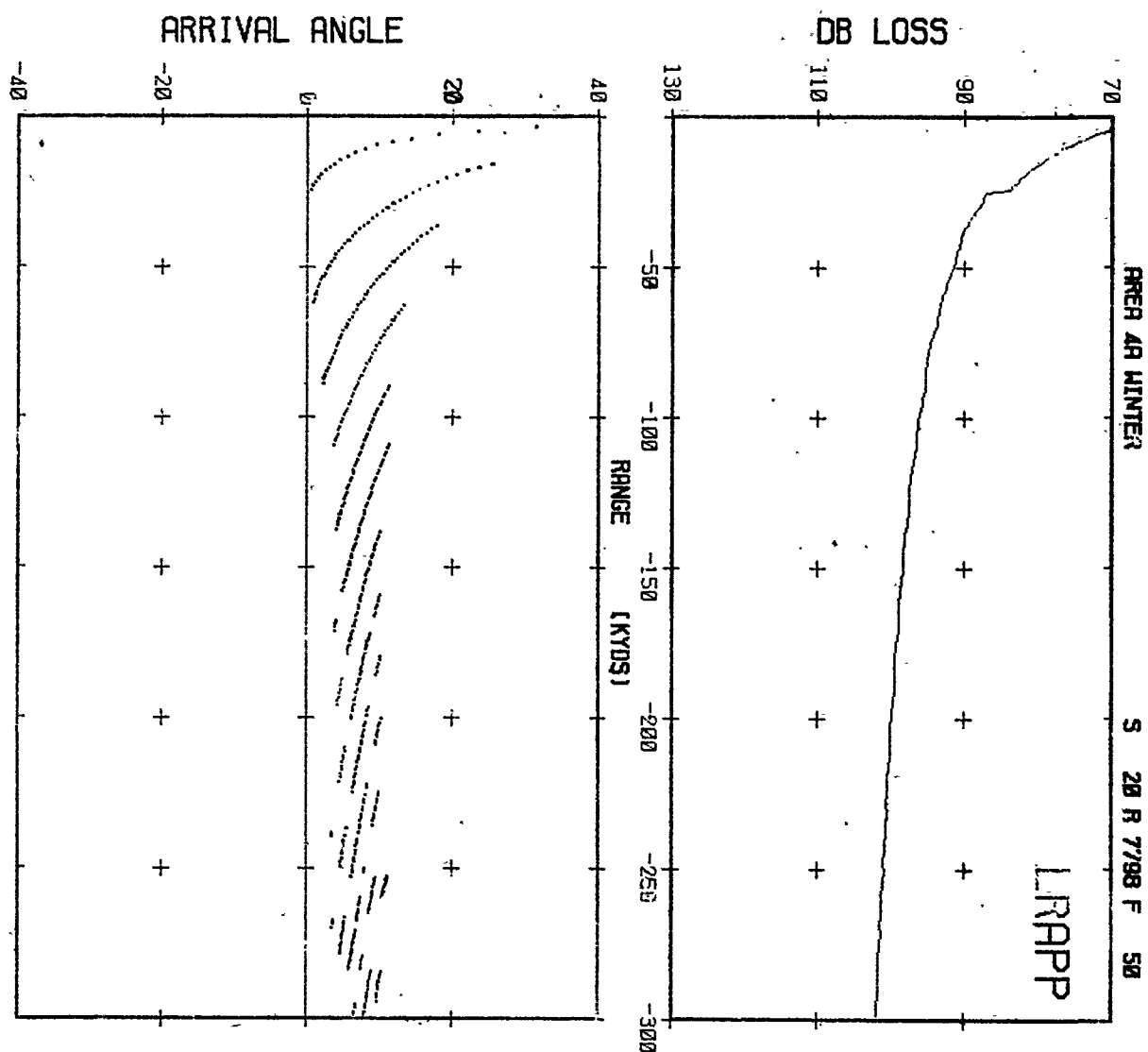
DEPTH IN METERS

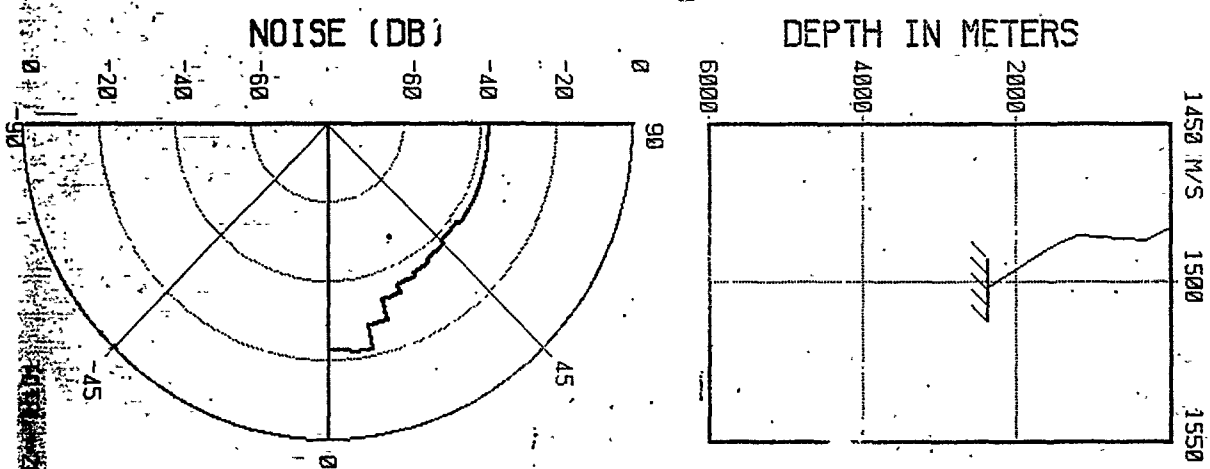
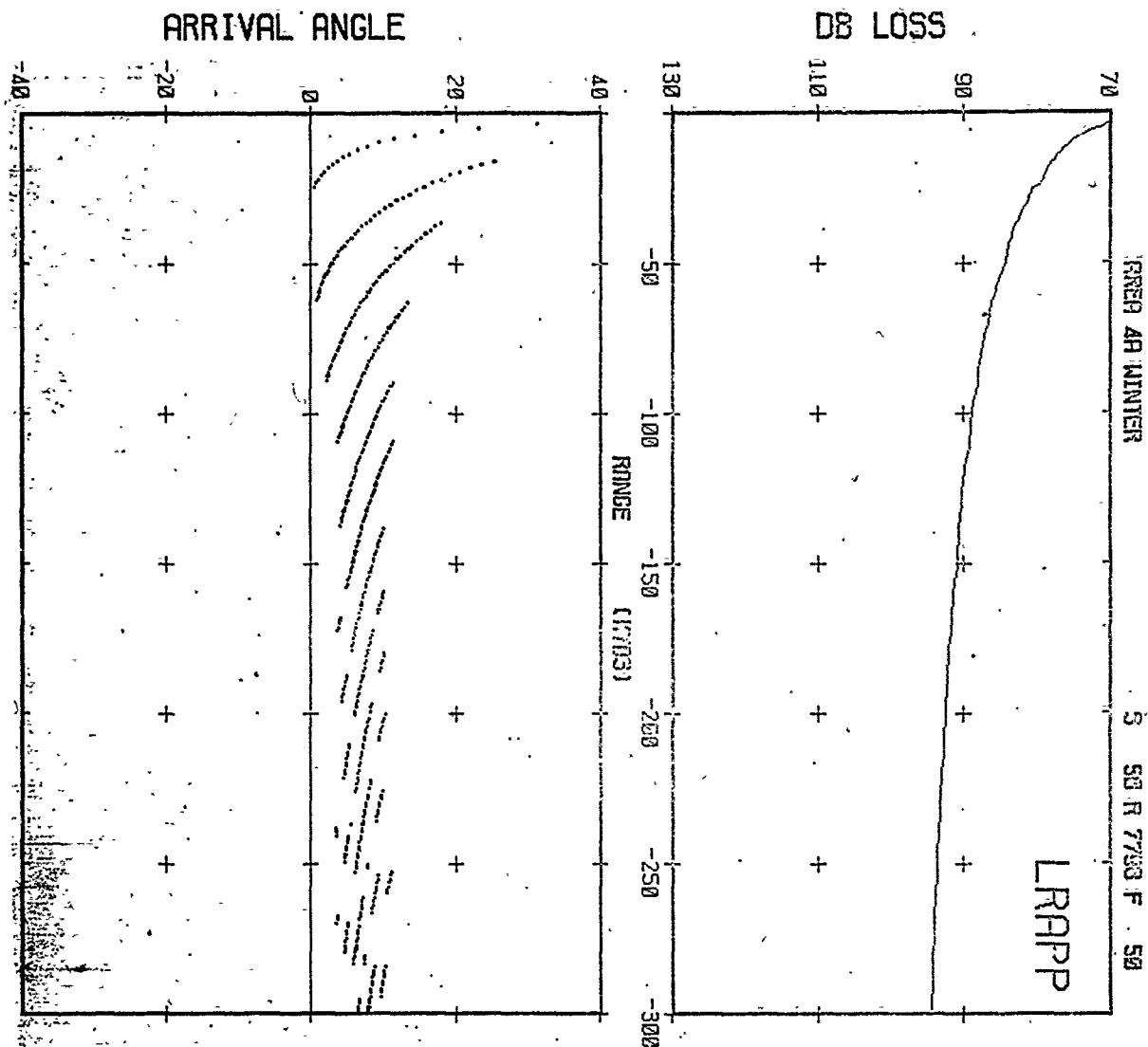


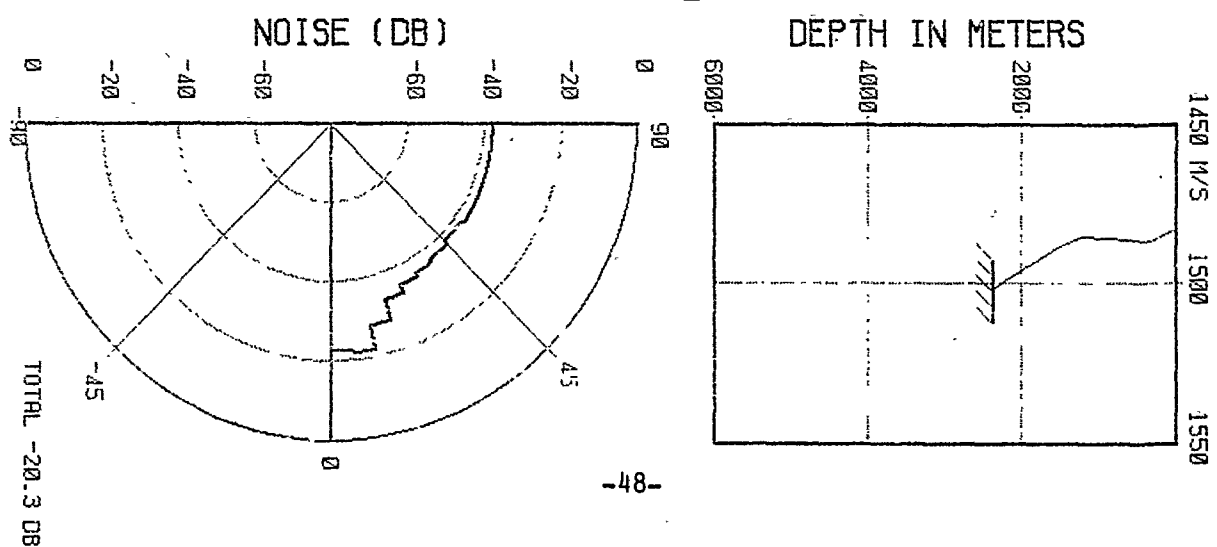
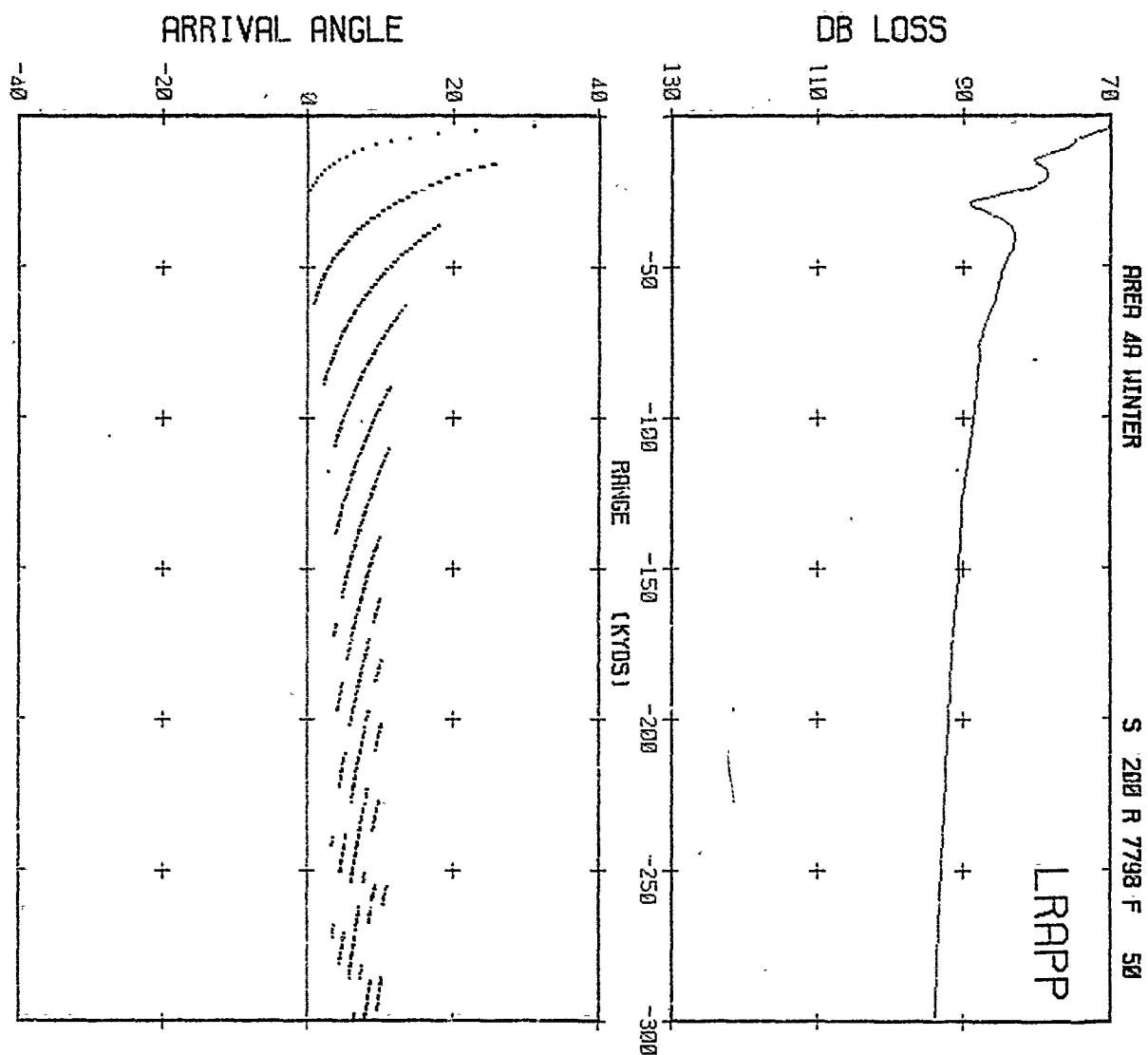
NOISE (DB)



TOTAL -17.8 DB





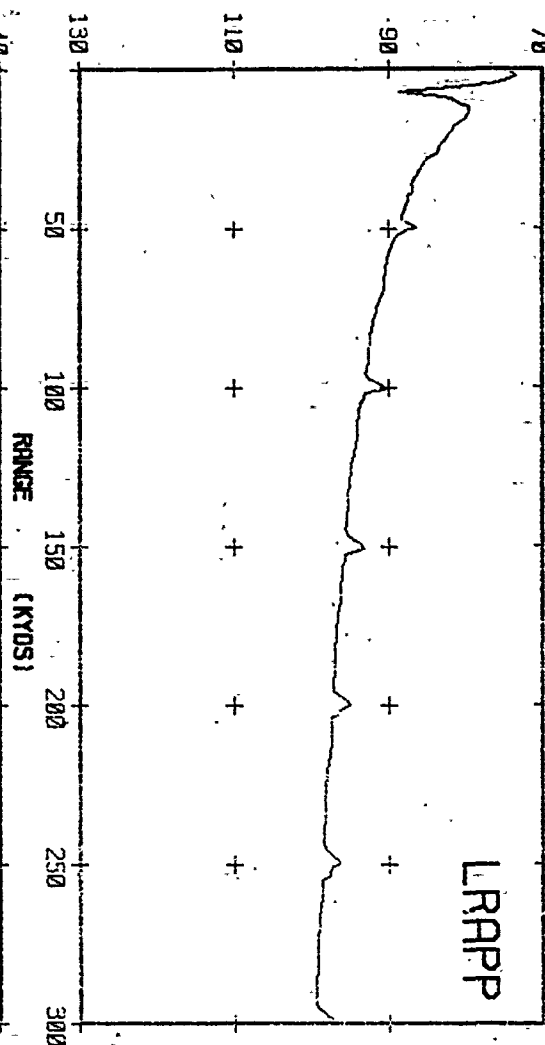


RPER 4R WINTER

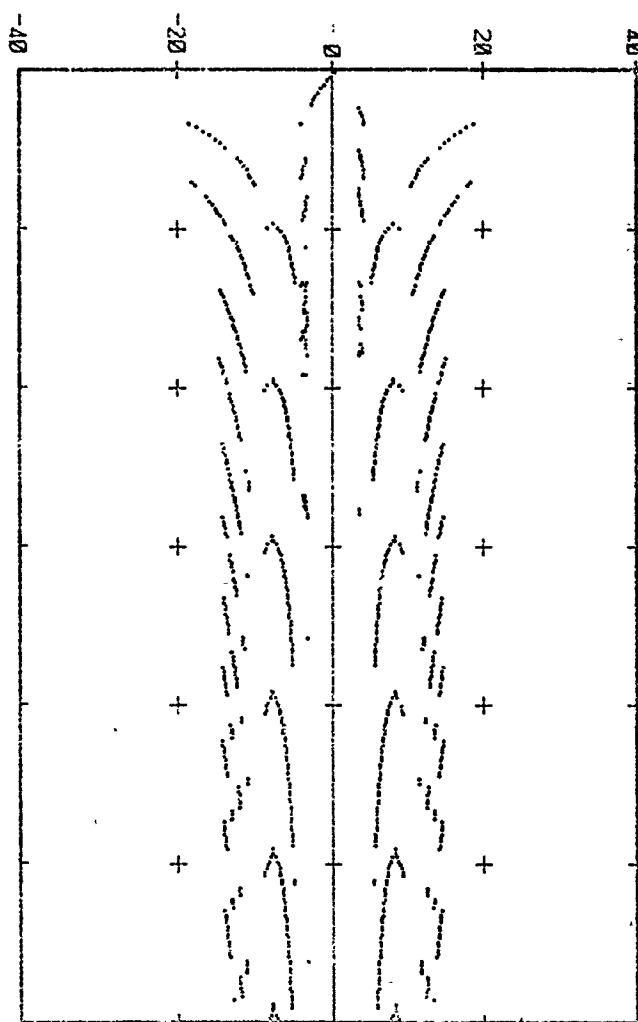
S 20 R 66 F 70

1450 M/S 1500 1550

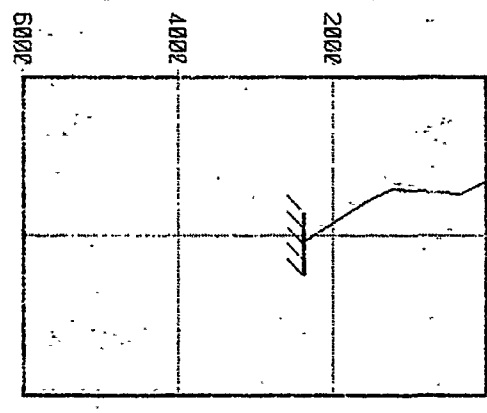
DB LOSS



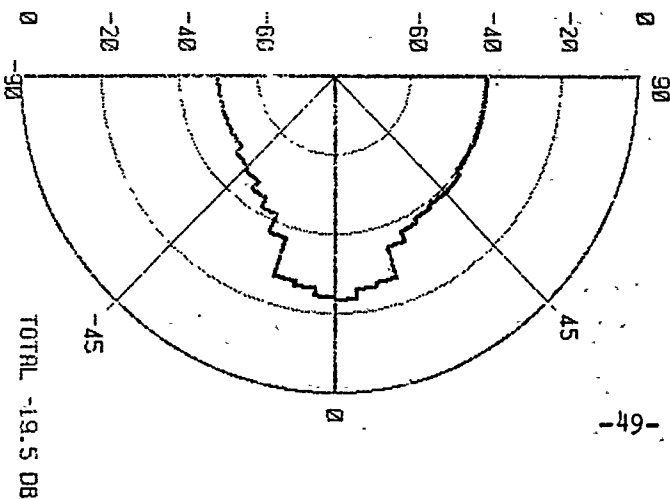
ARRIVAL ANGLE

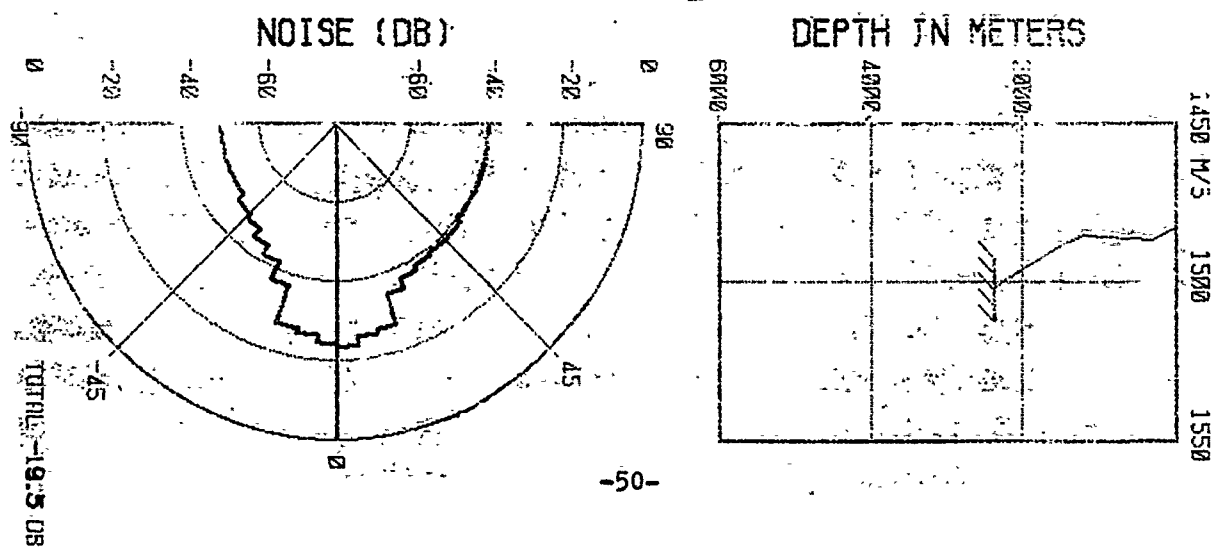
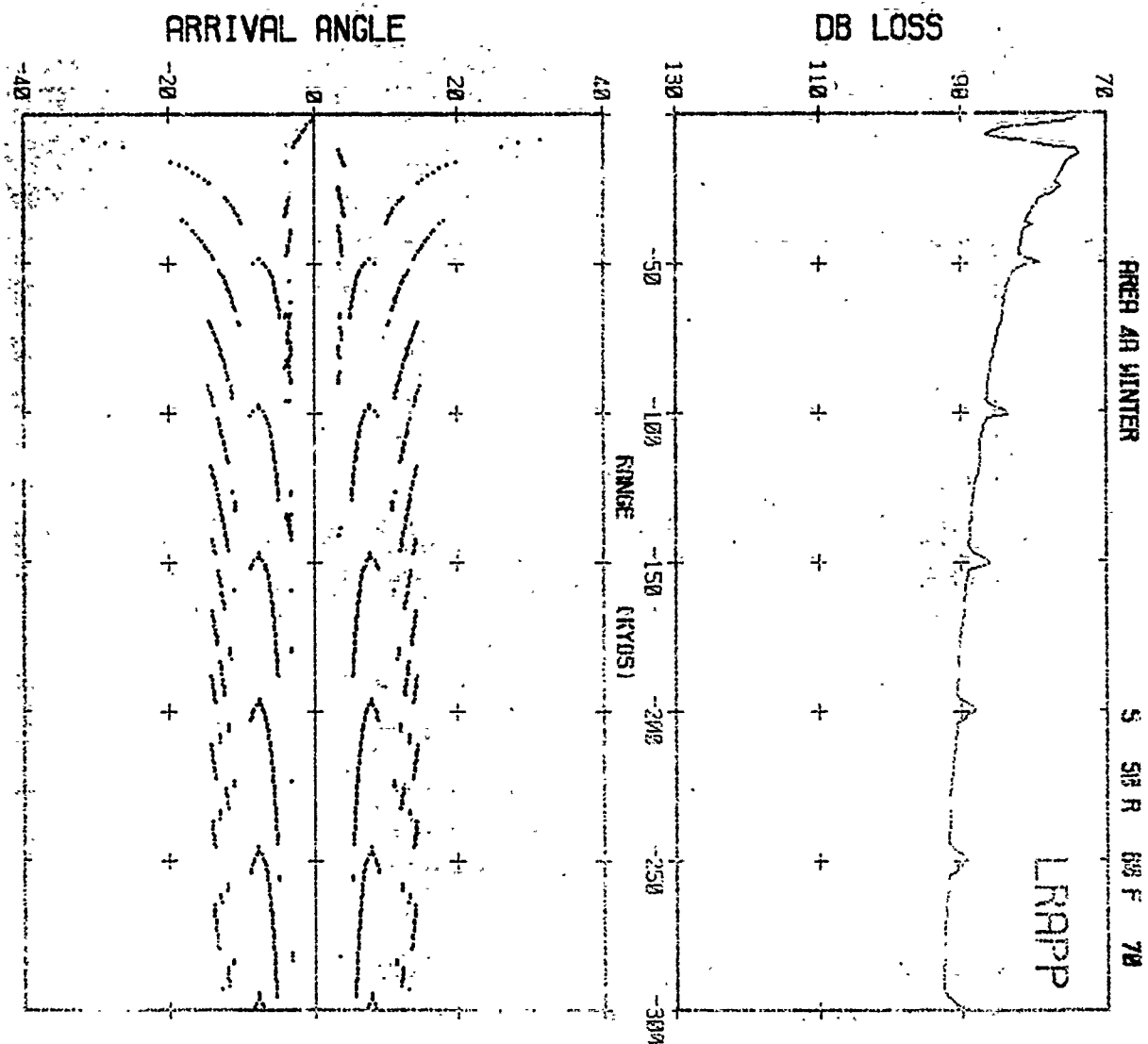


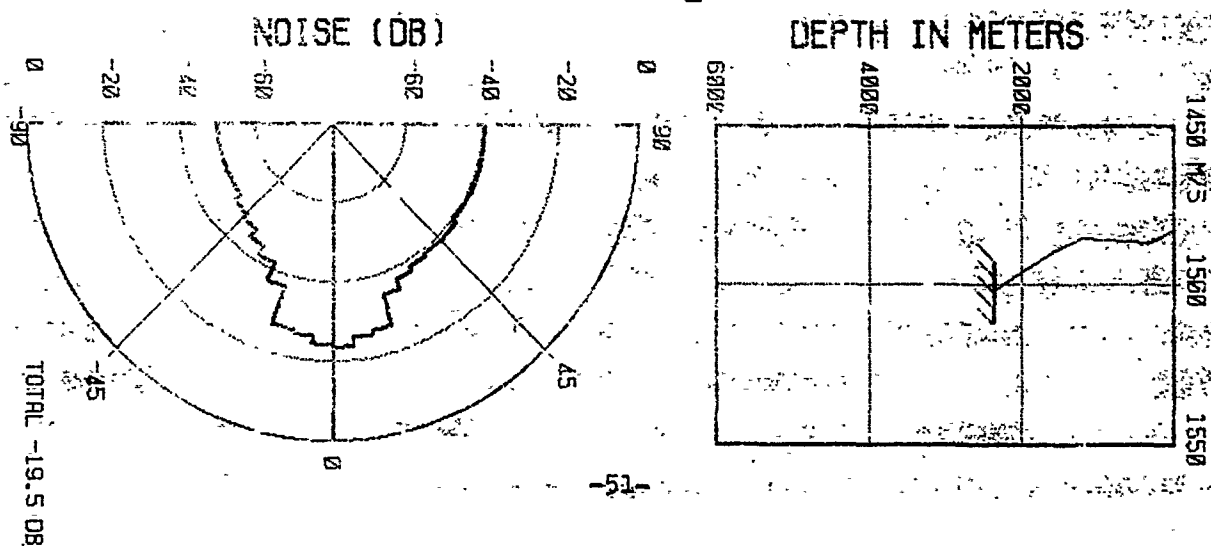
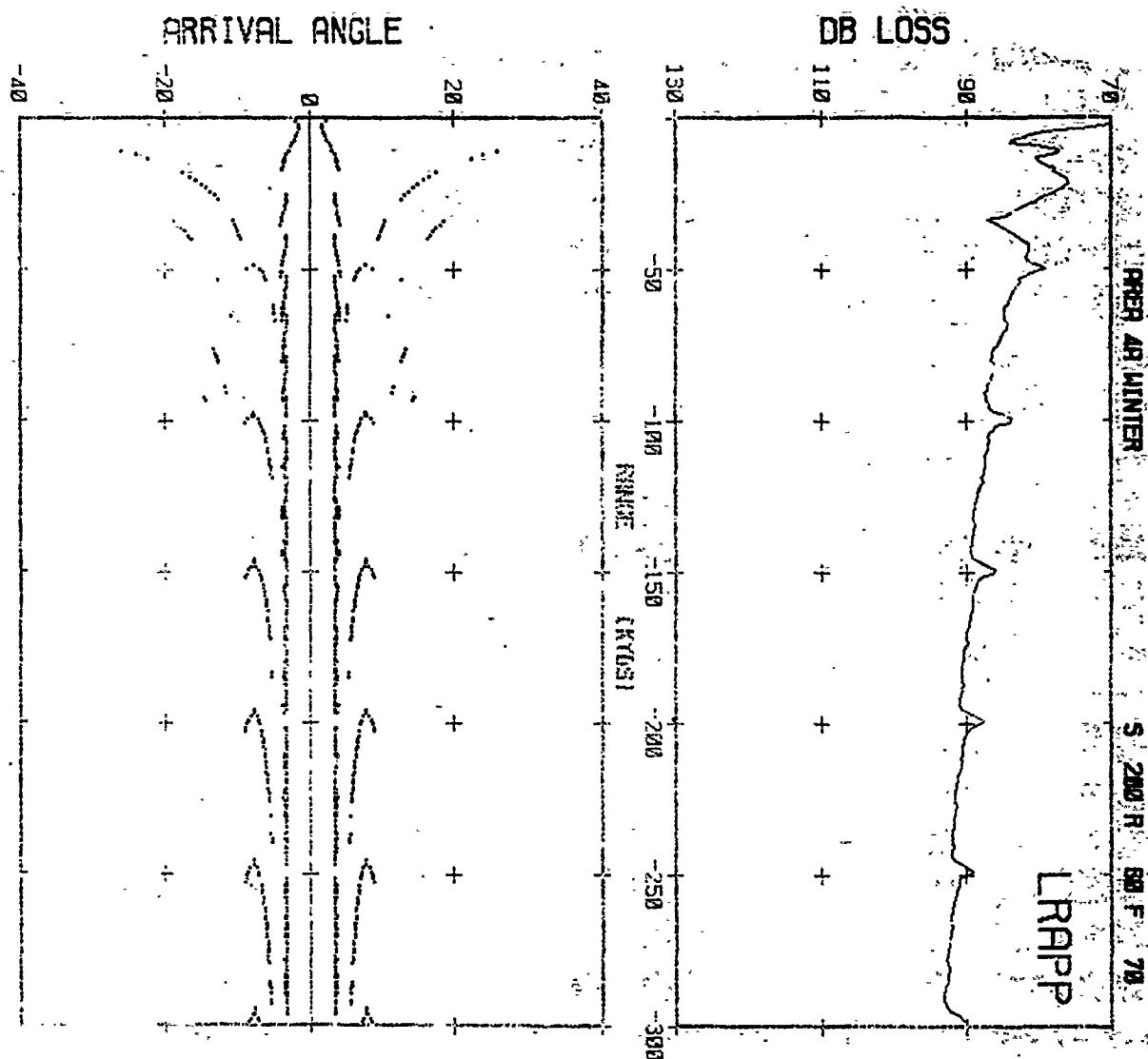
DEPTH IN METERS

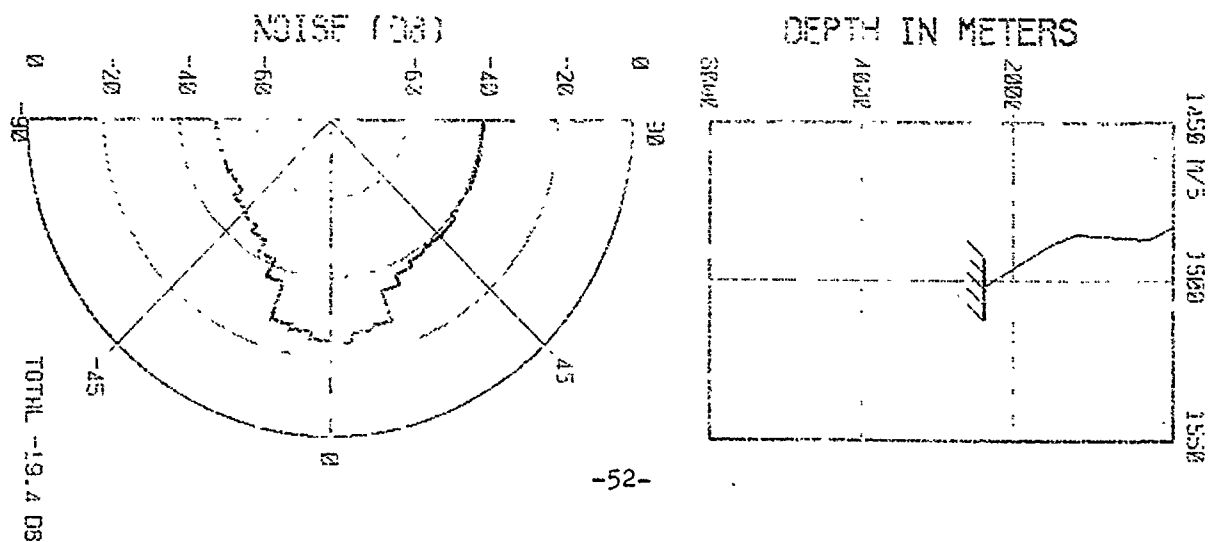
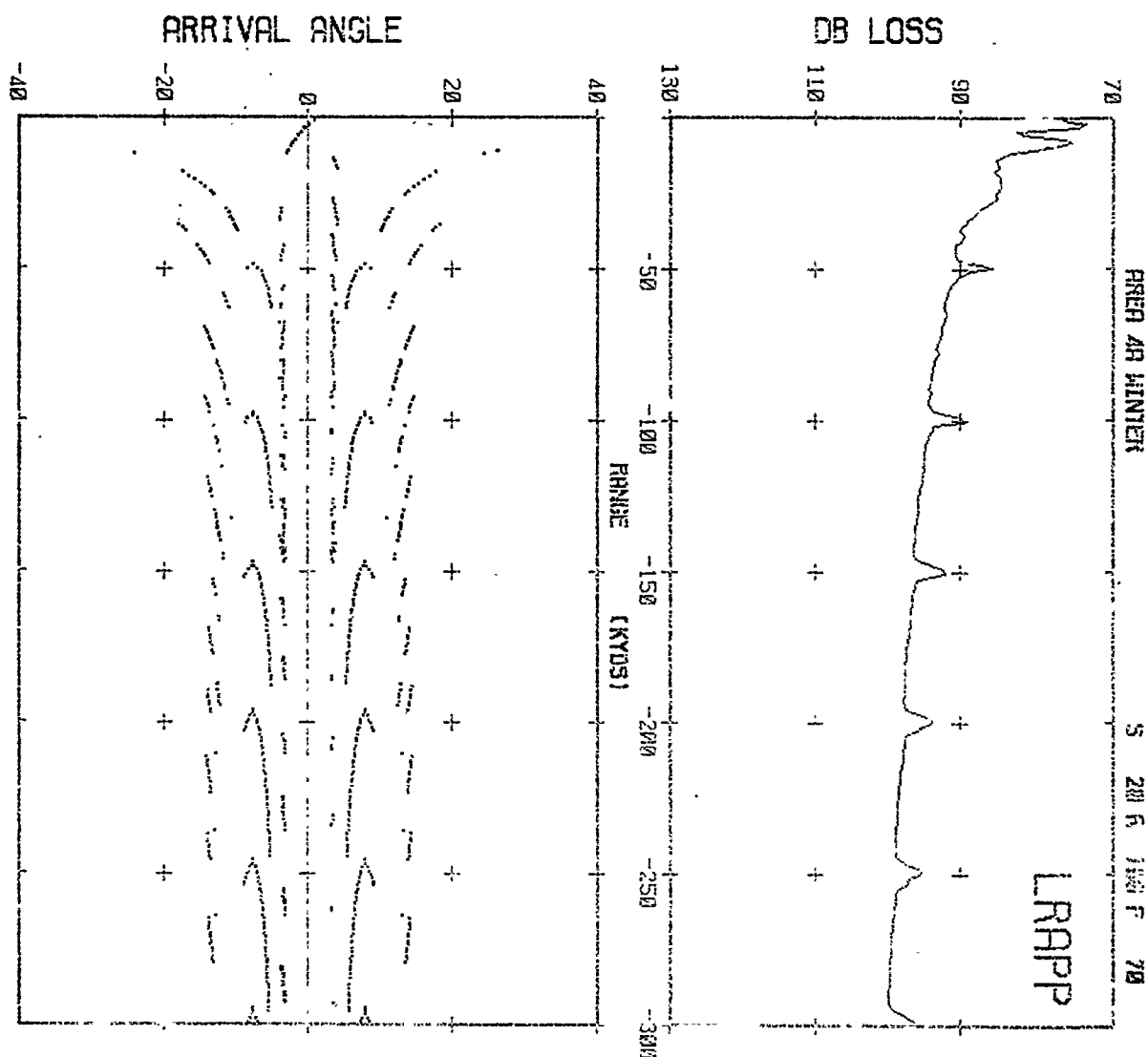


NOISE (DB)







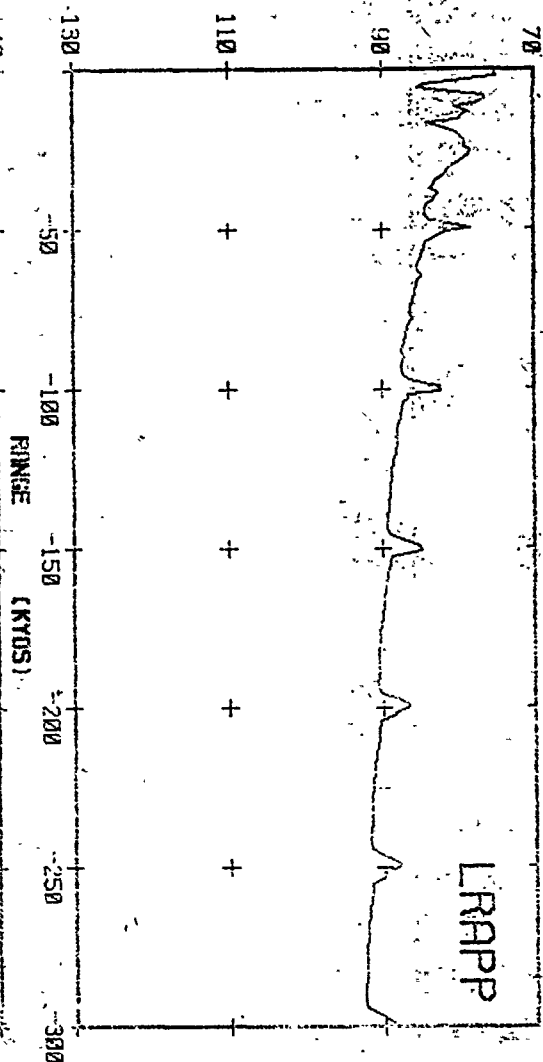


PRER APR WINTER

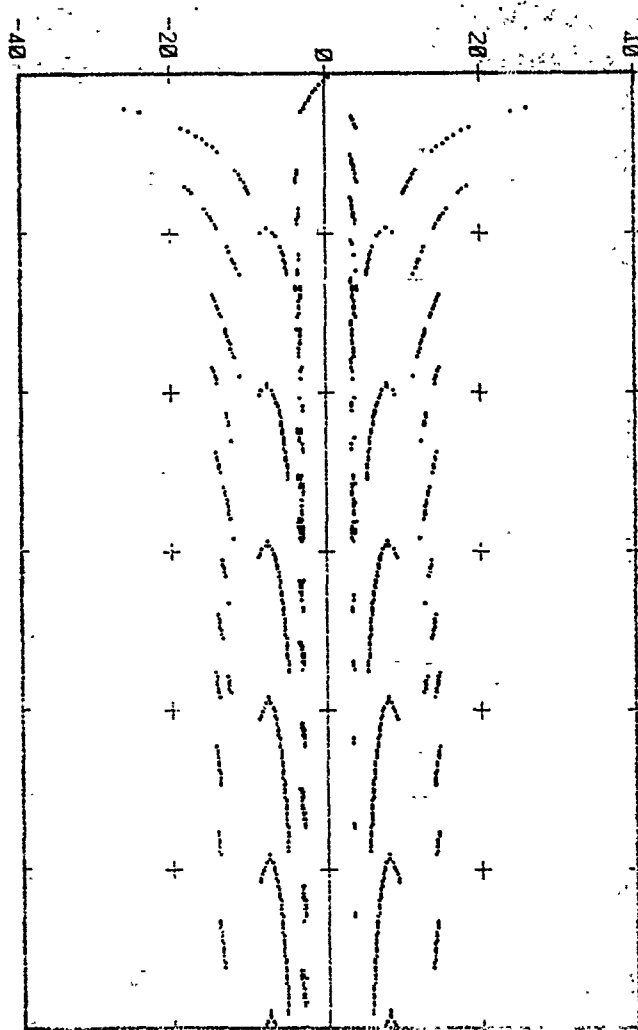
S. 50 R. 16W F. 70

1450 M/S 1500 1550

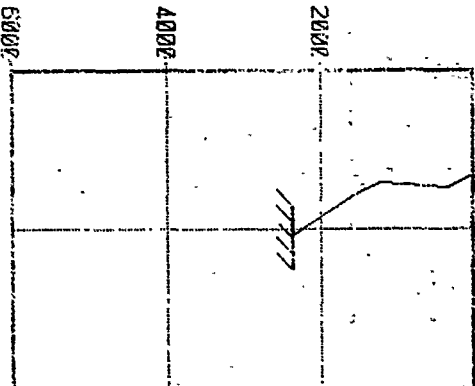
DB LOSS



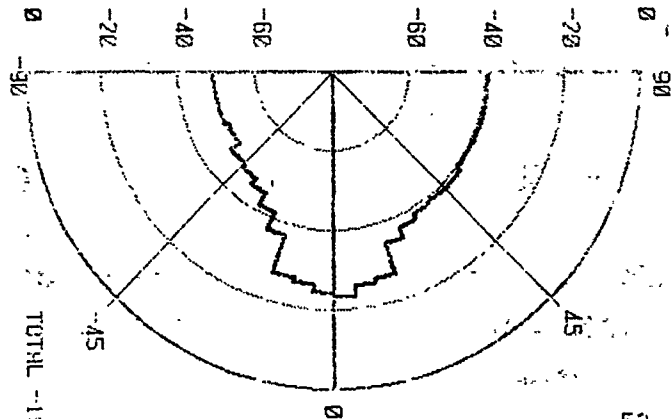
ARRIVAL ANGLE

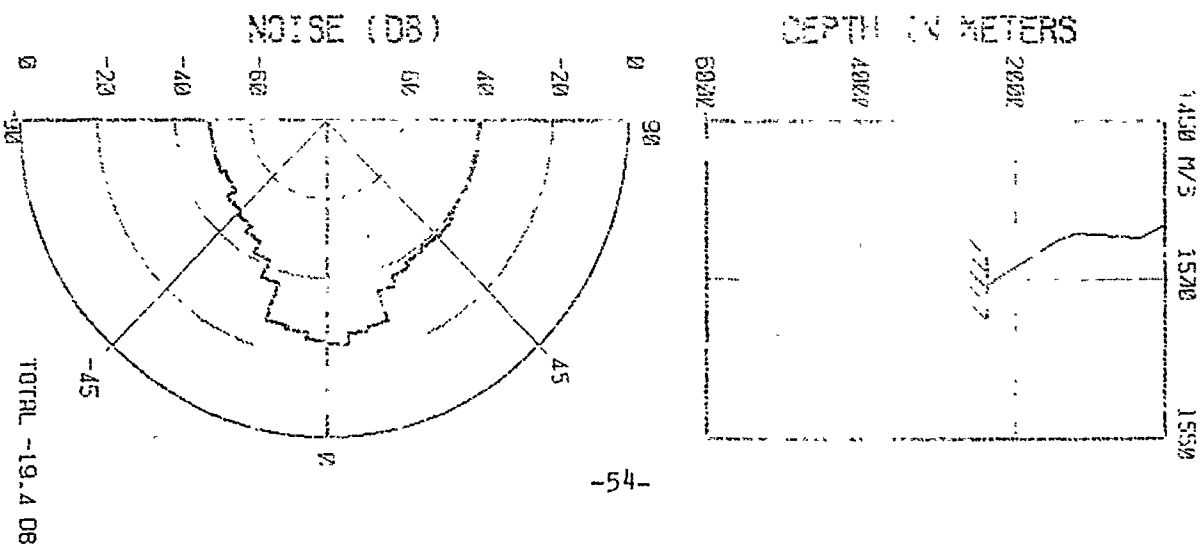
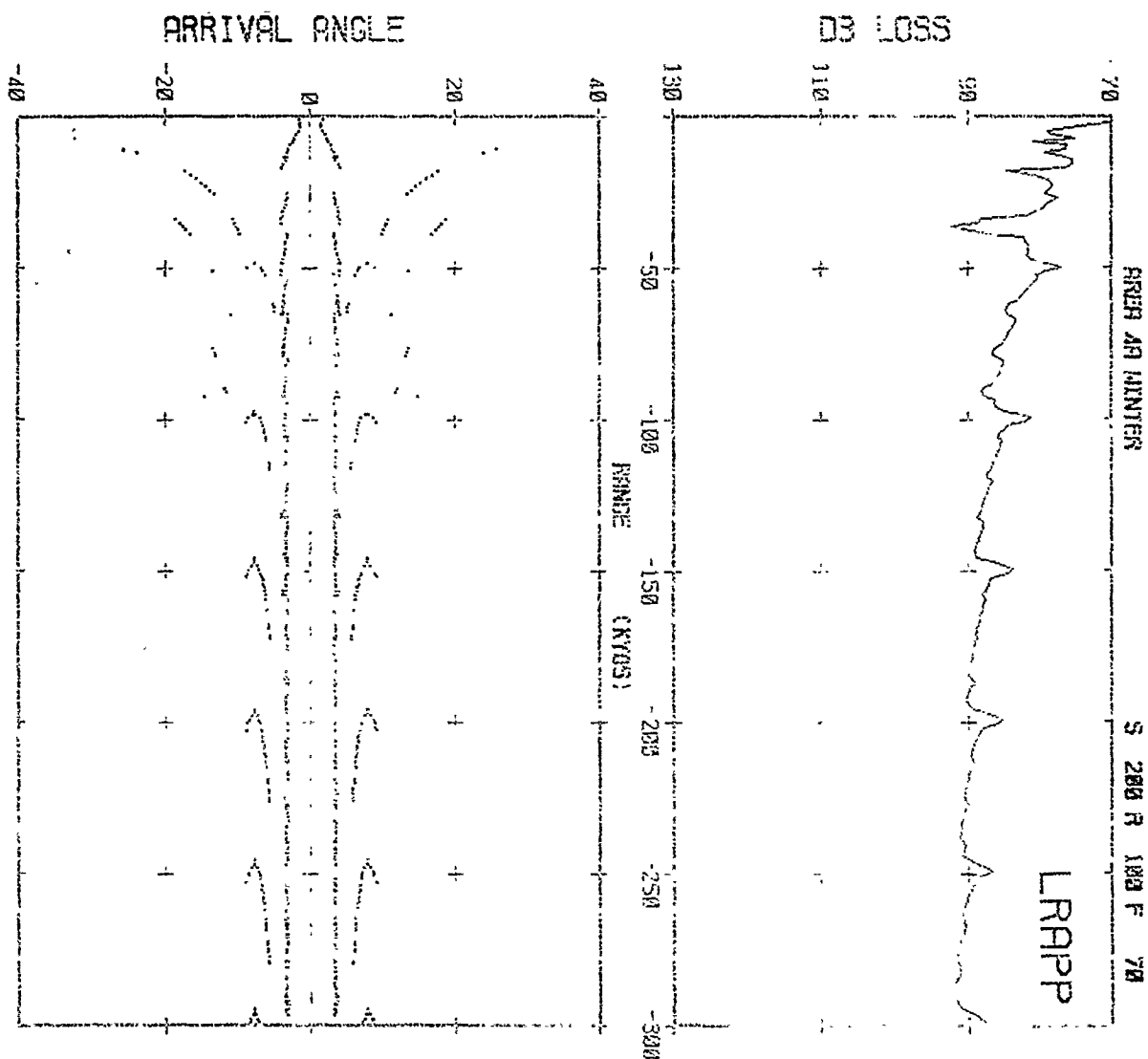


DEPTH IN METERS



NOISE (DB)





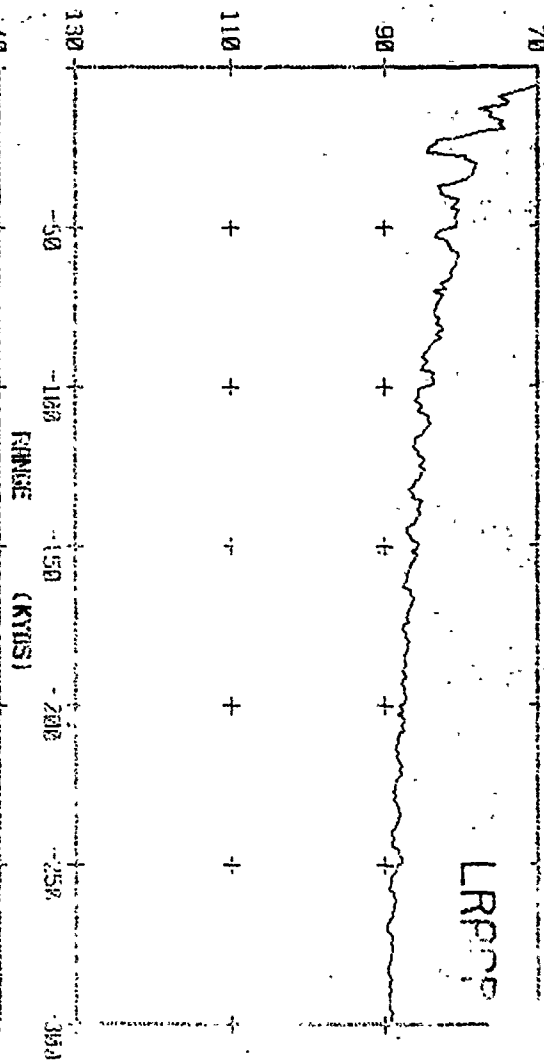
PREP AIR WINTER

5 200 R 200 P 79

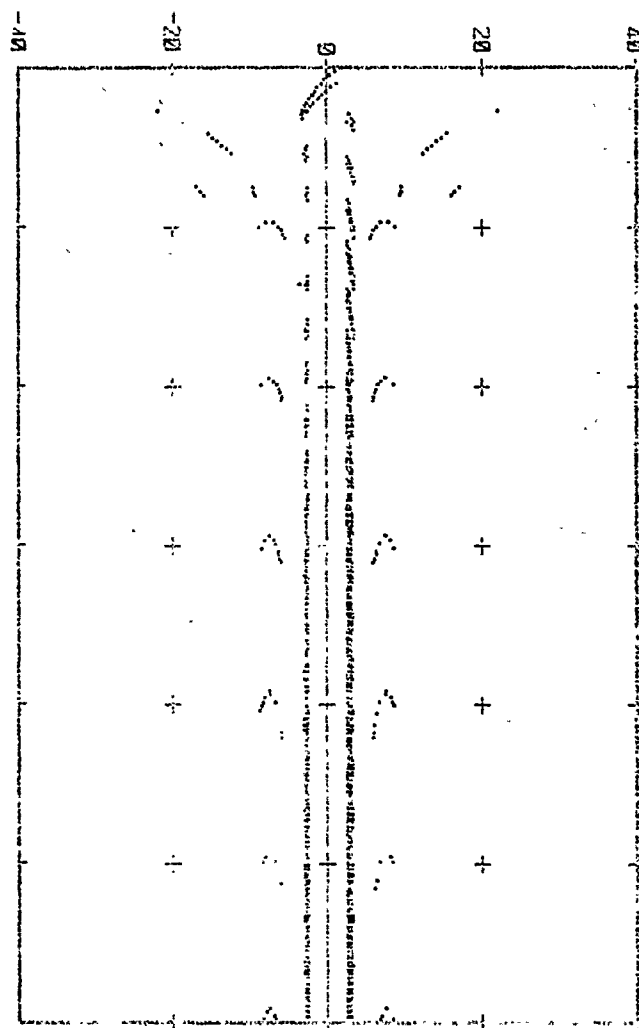
1500 M/S 1500

150

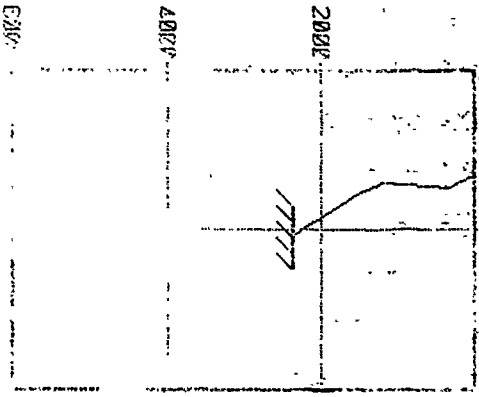
DB LOSS



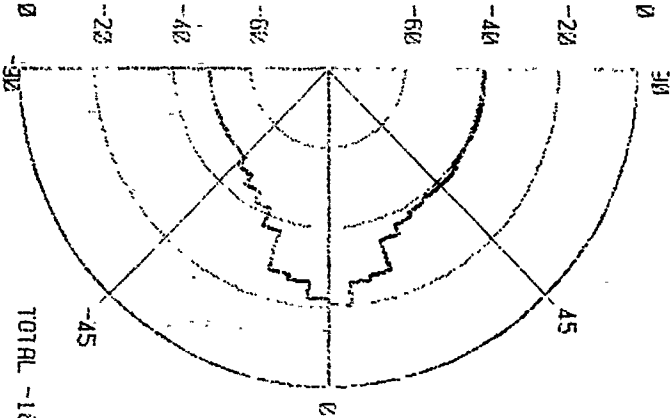
ARRIVAL ANGLE



DEPTH IN METERS

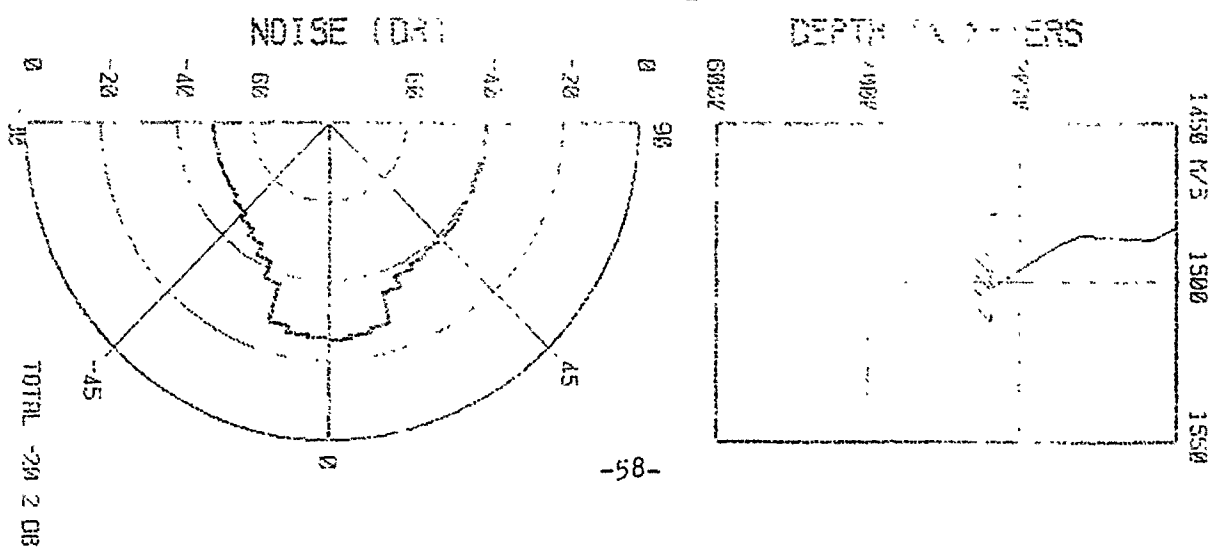
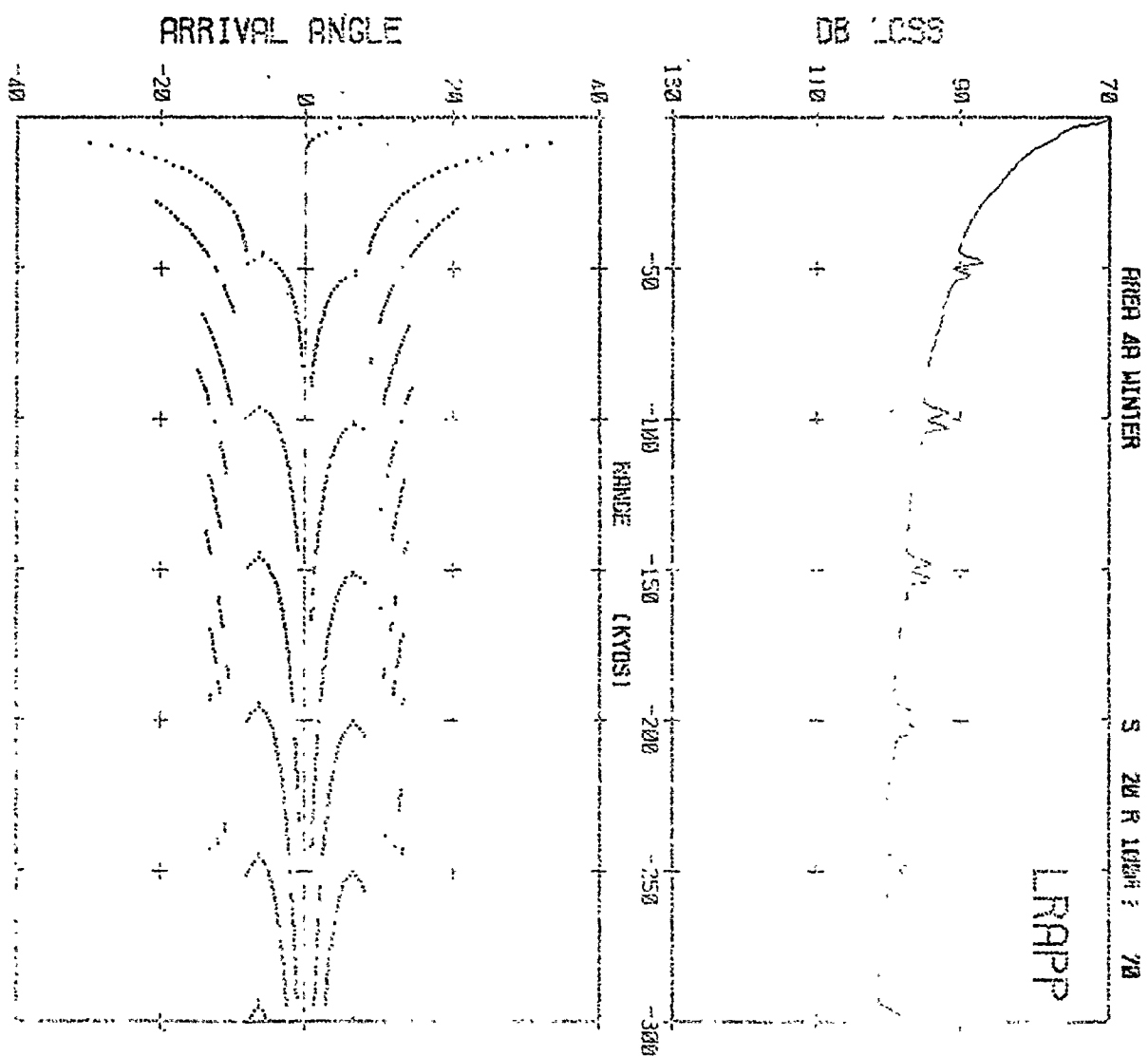


NOISE (DB)



TOTAL -18.1 DB

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

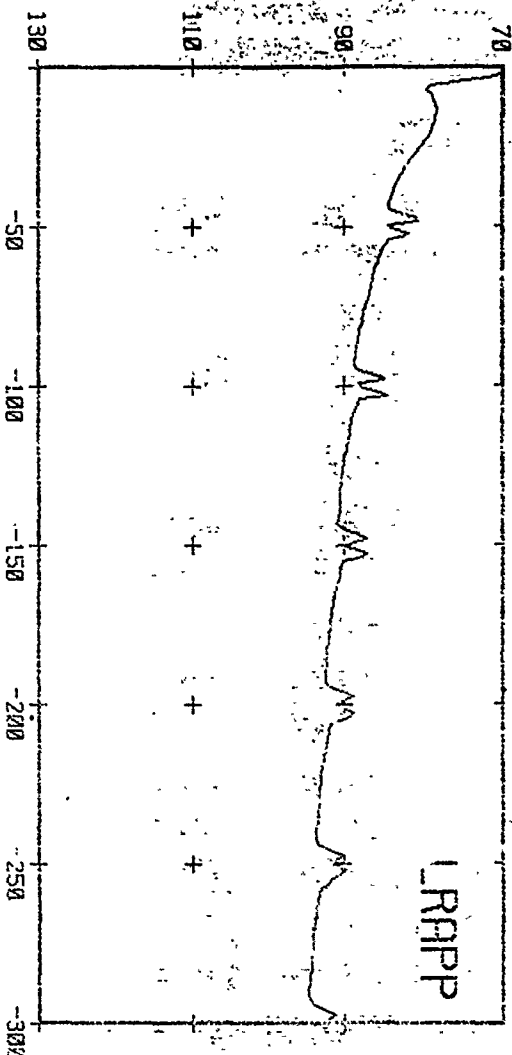


AREA 4A WINTER

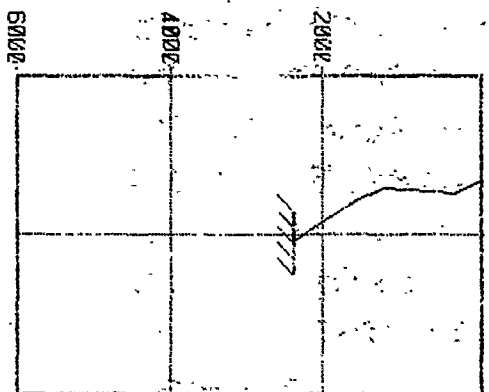
S 50 R 10N F 70

1450 M/S 1500 1550

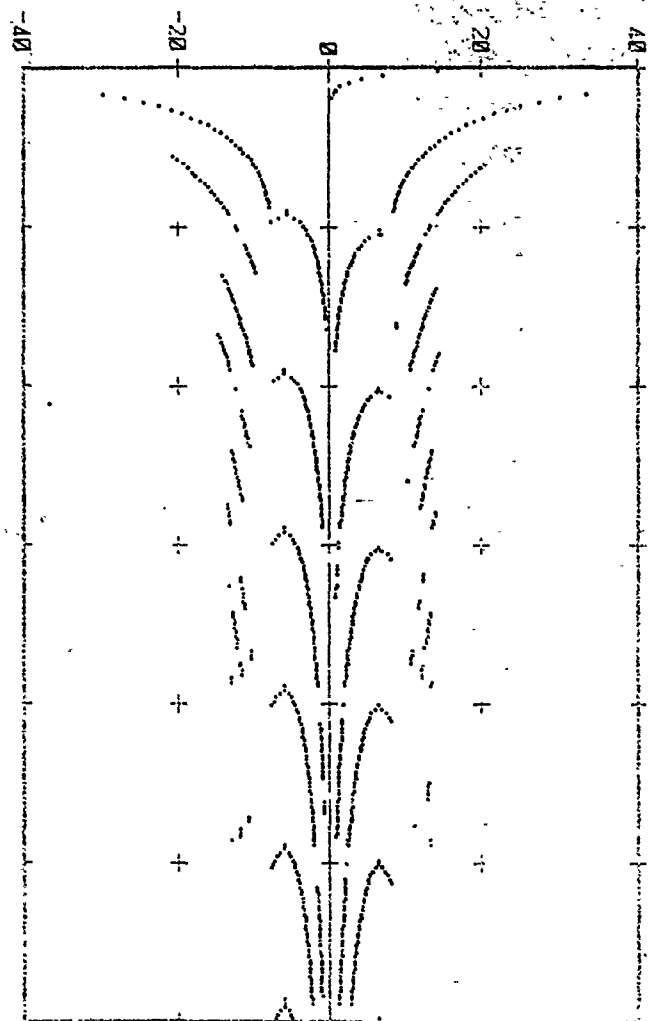
DB LOSS



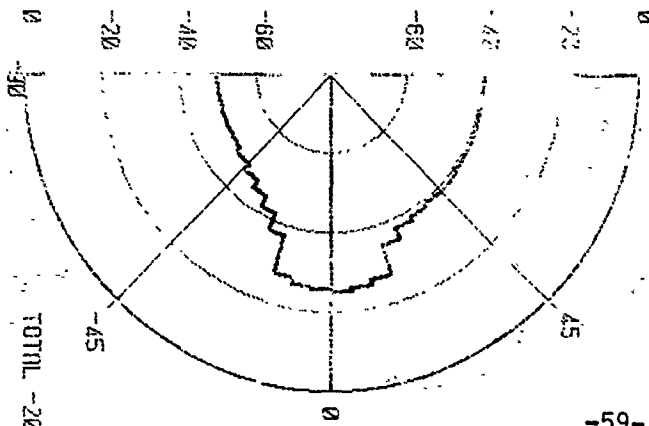
DEPTH IN METERS



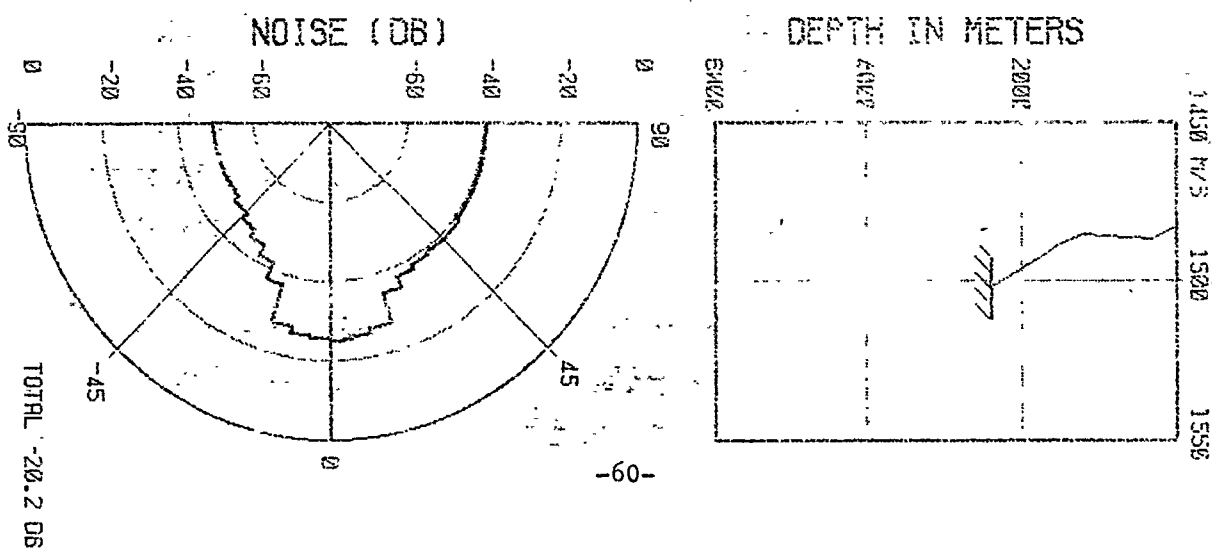
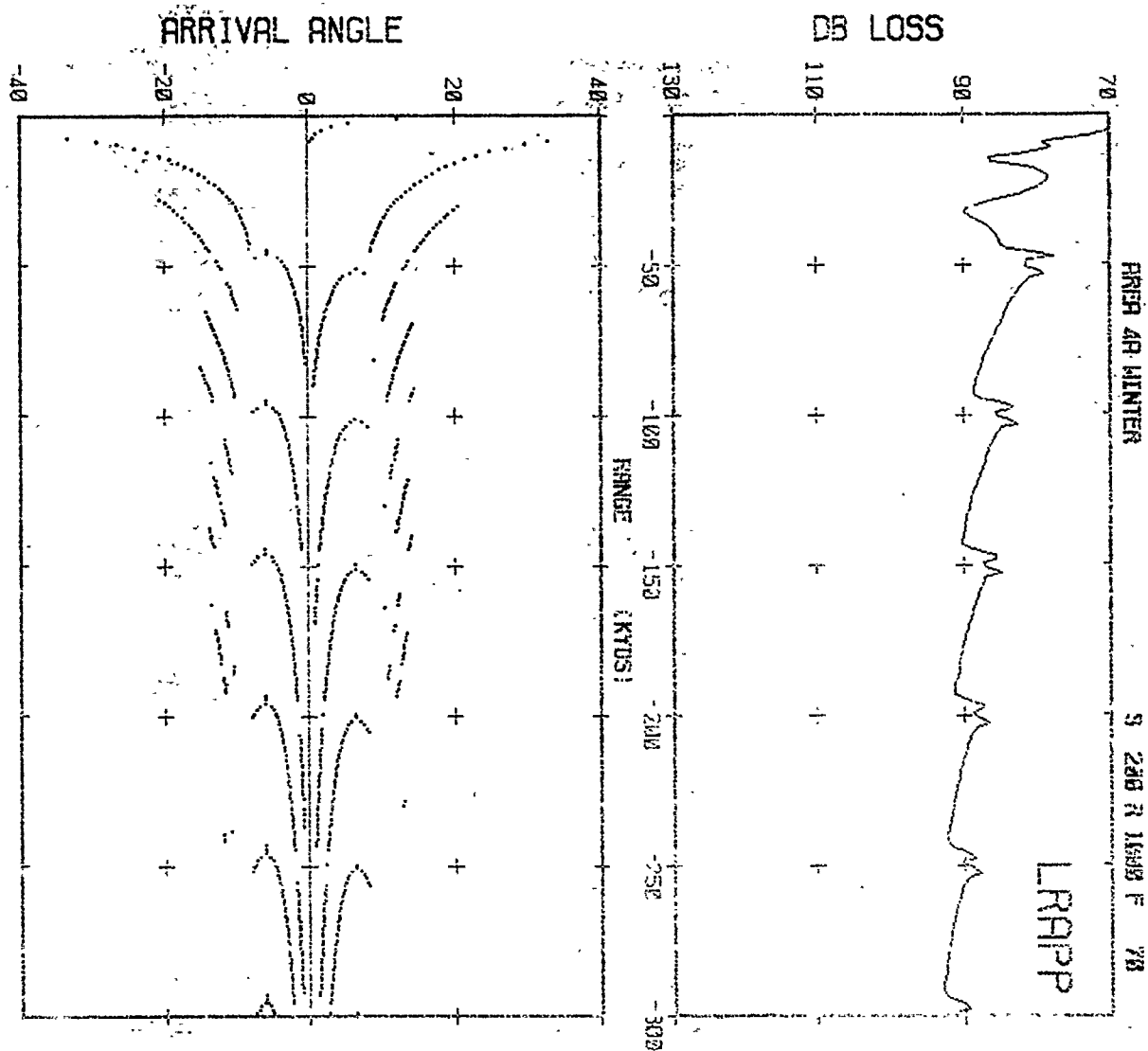
ARRIVAL ANGLE



NOISE (DB)



TOTNL -20.2 DB

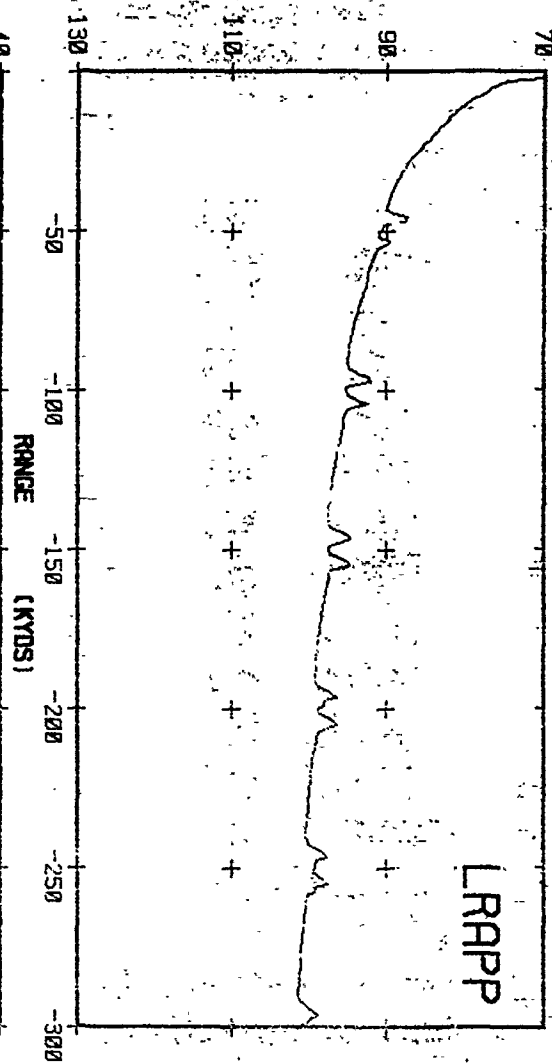


AREA 49 MINTER

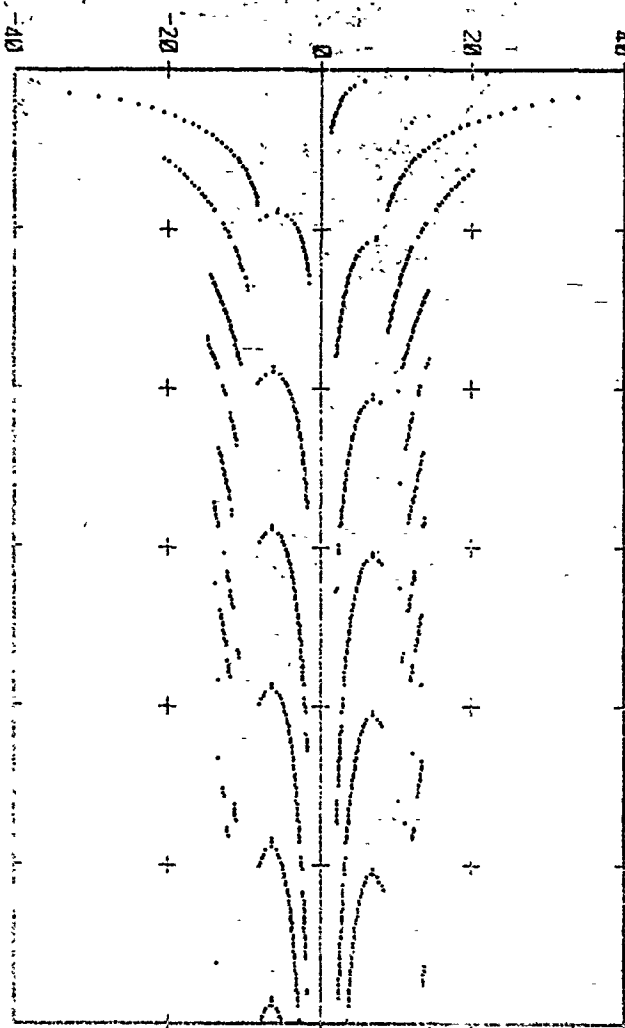
S 20 R 1500 F 70

1450 M/S 1530 1550

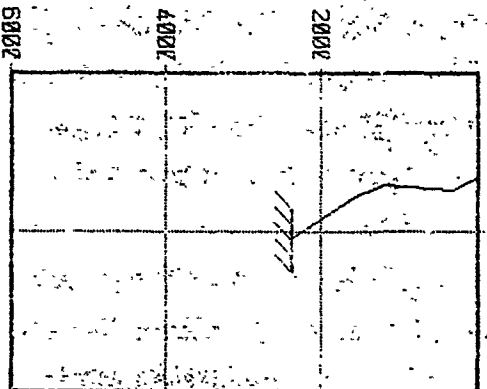
DB LOSS



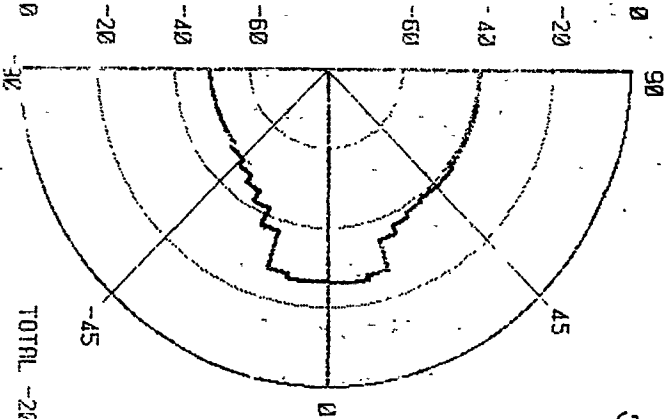
ARRIVAL ANGLE



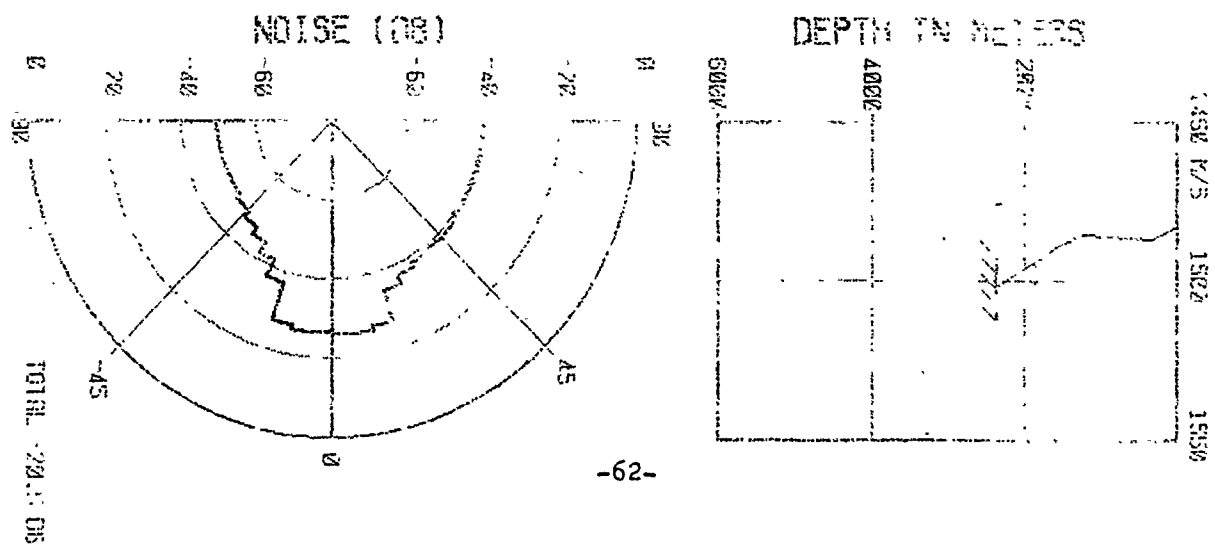
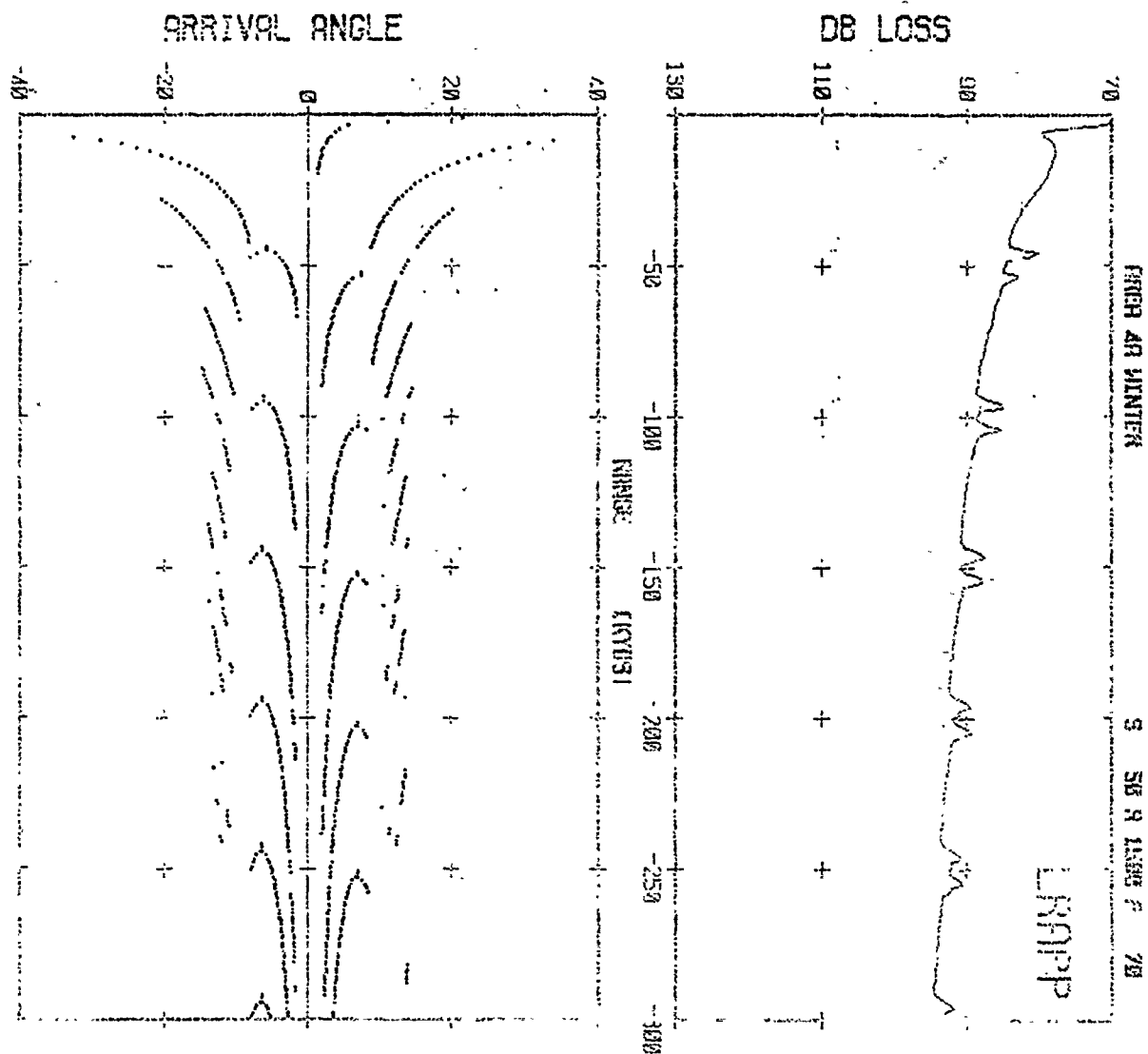
DEPTH IN METERS

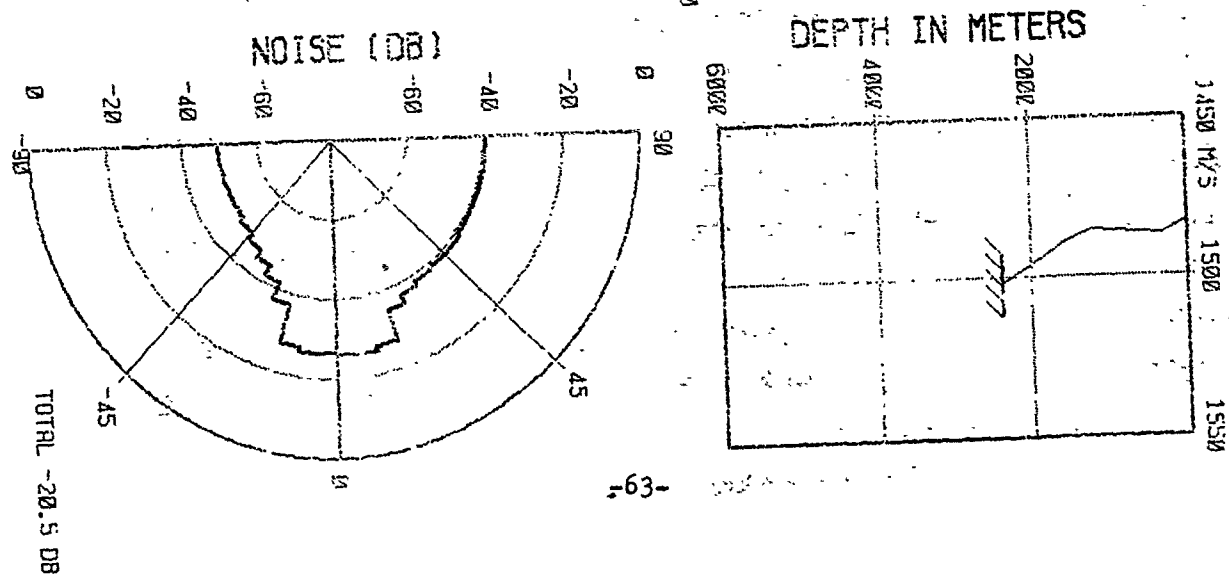
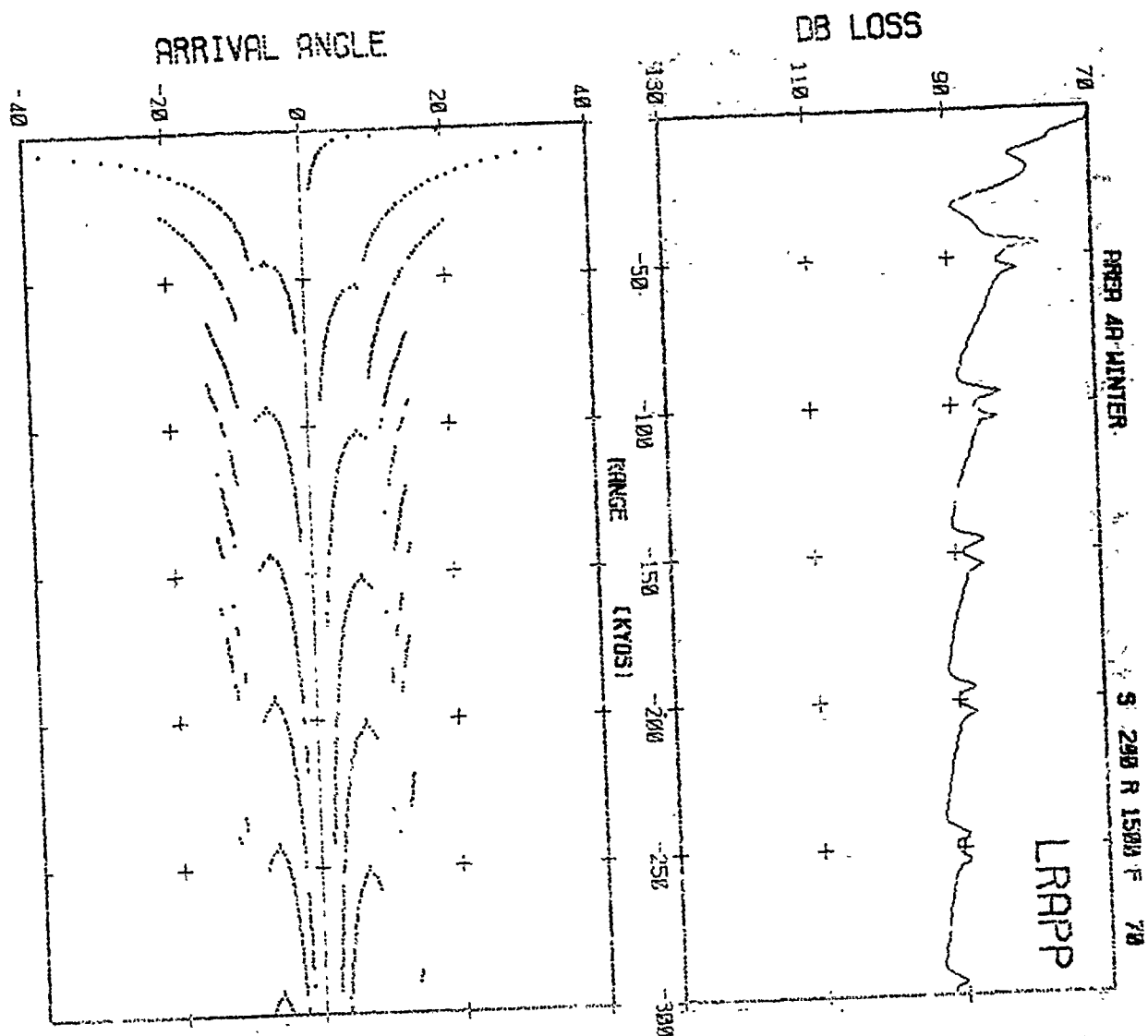


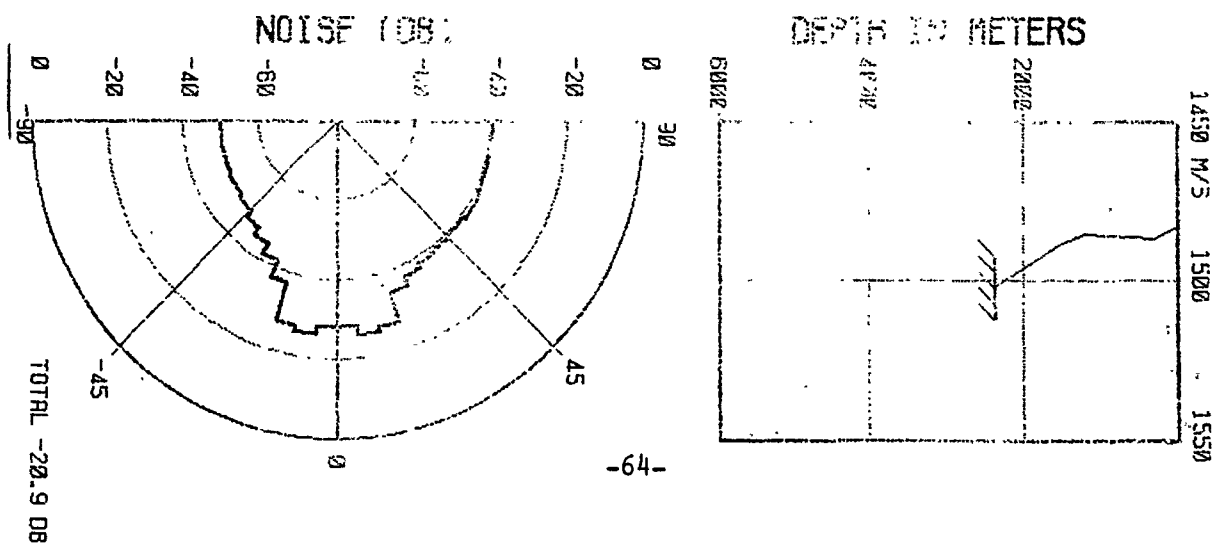
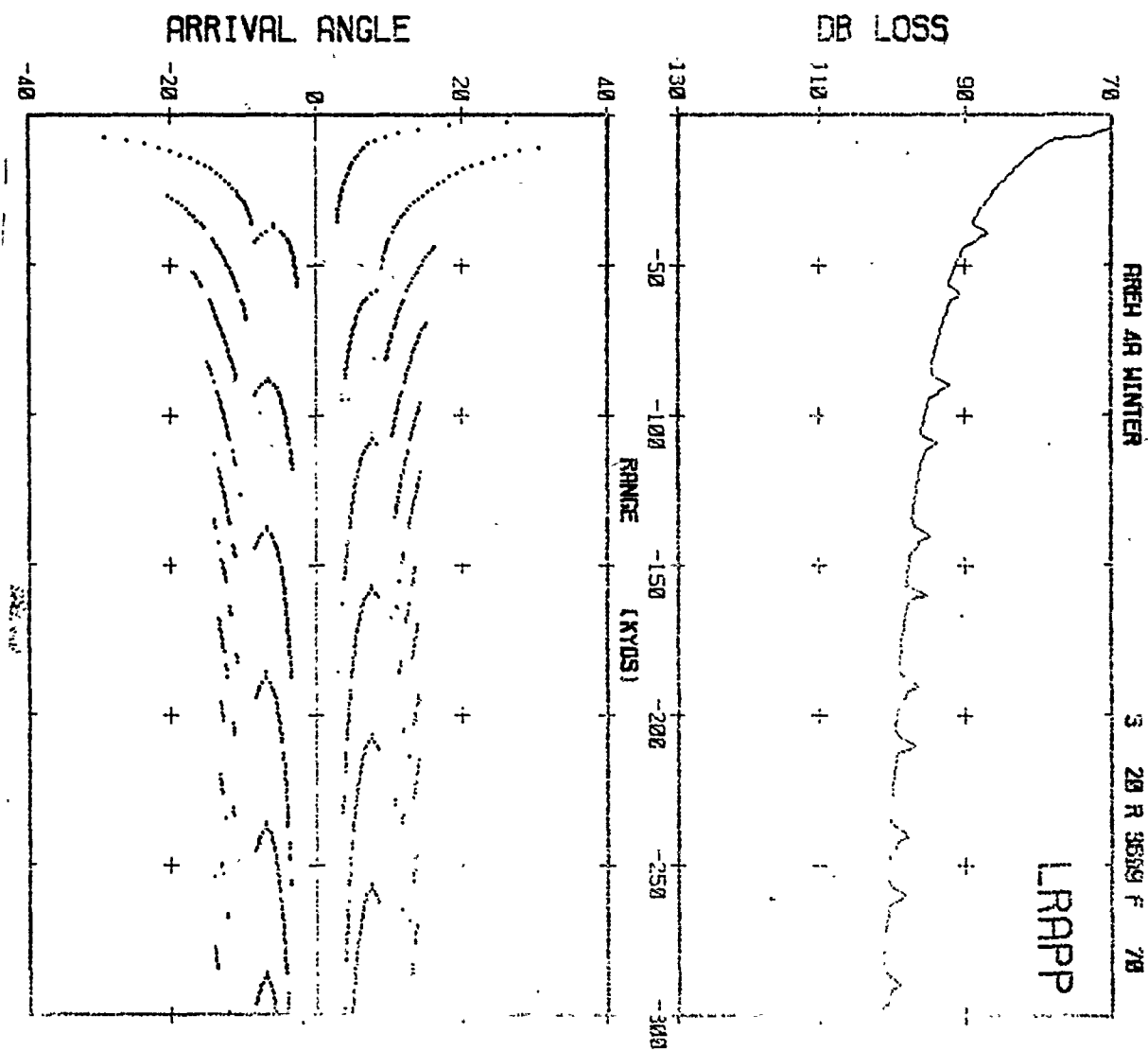
NOISE (DB)

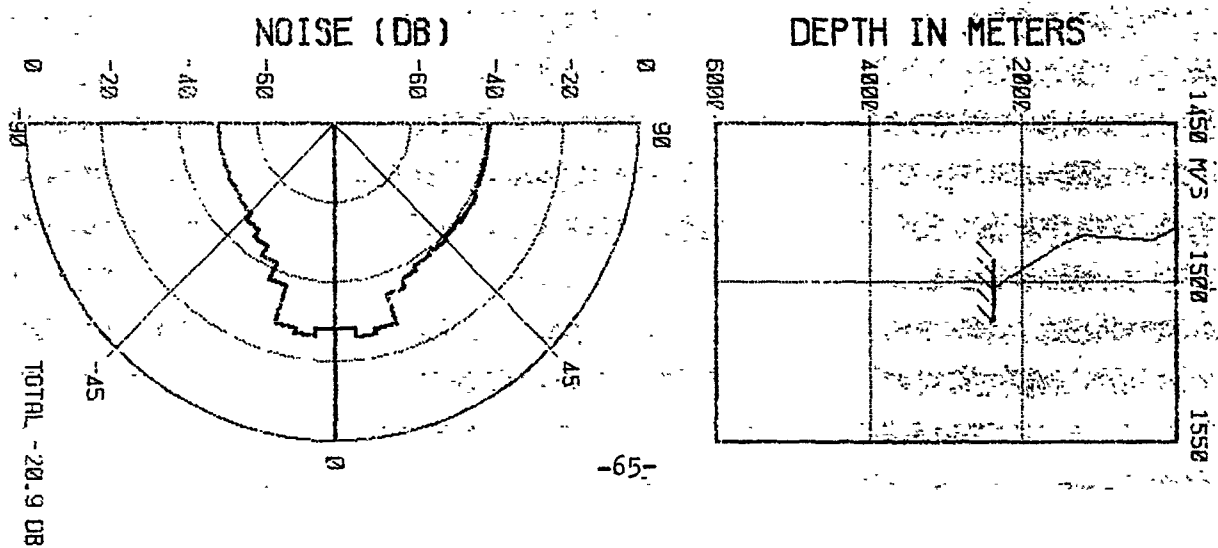
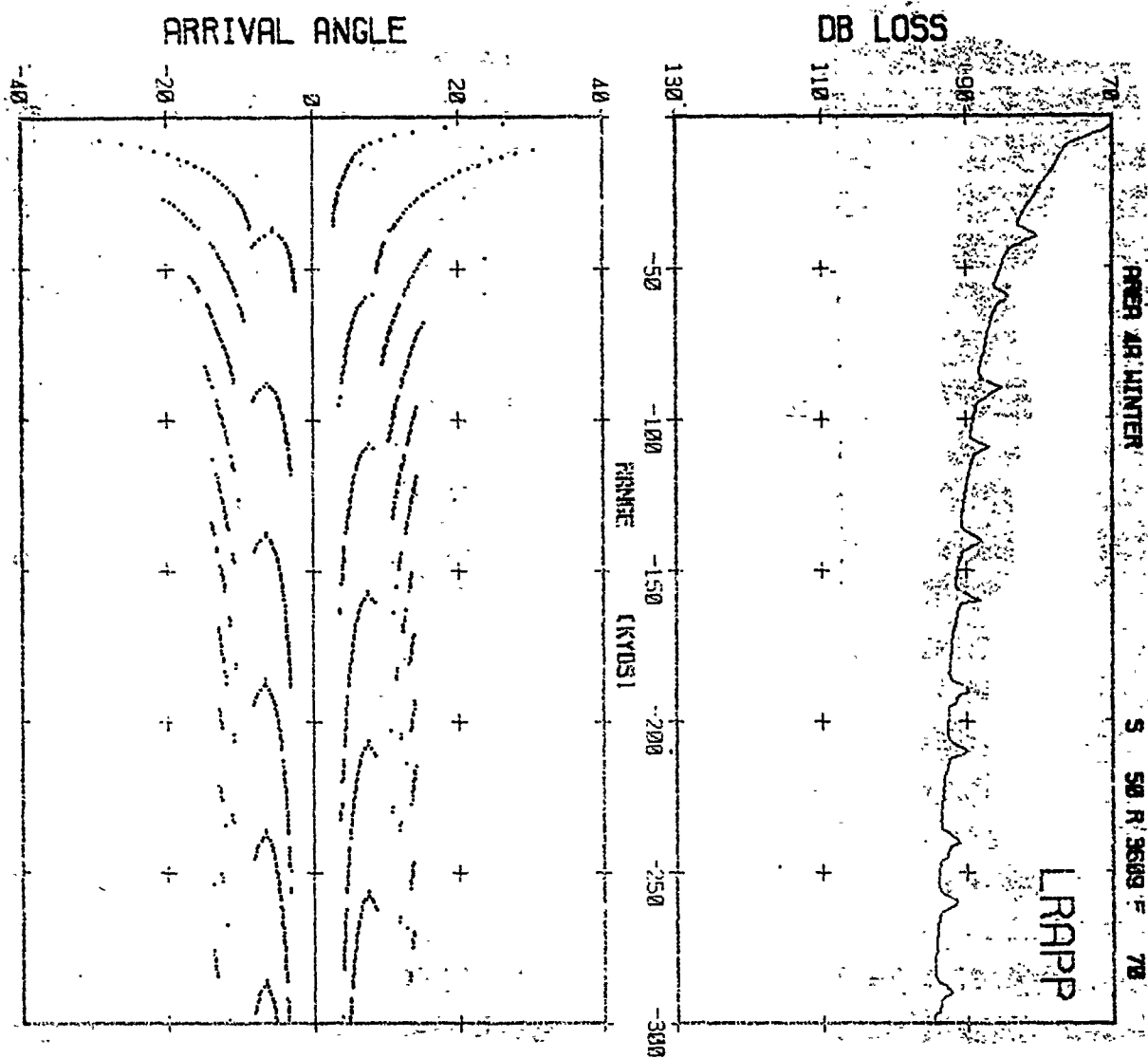


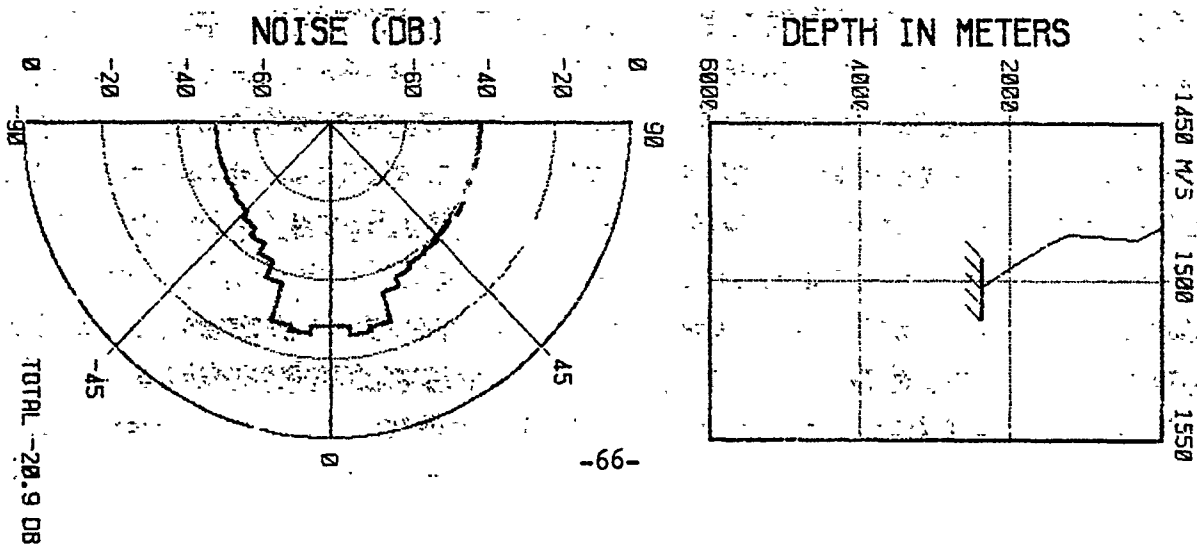
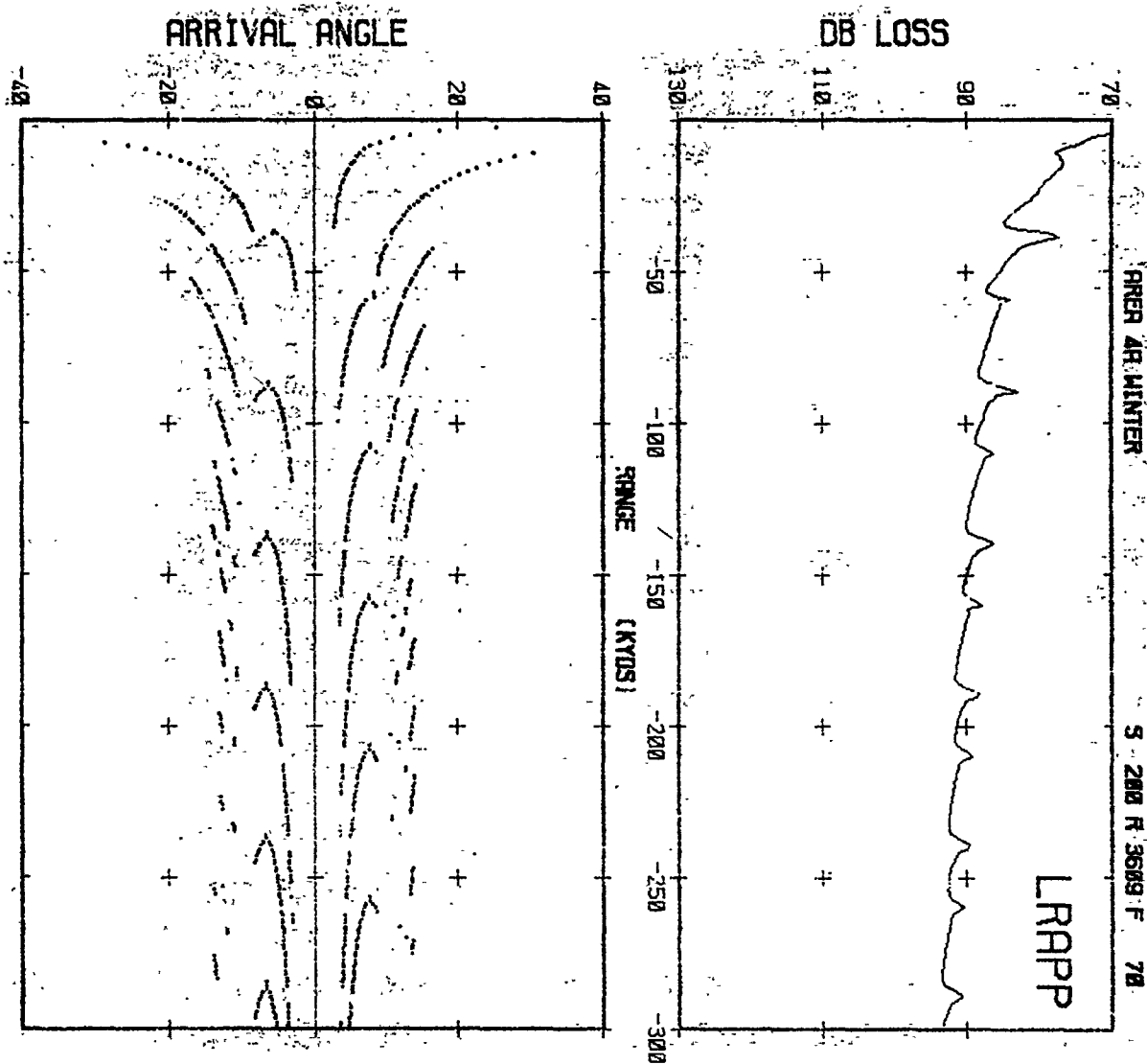
TOTAL -20.5 DB



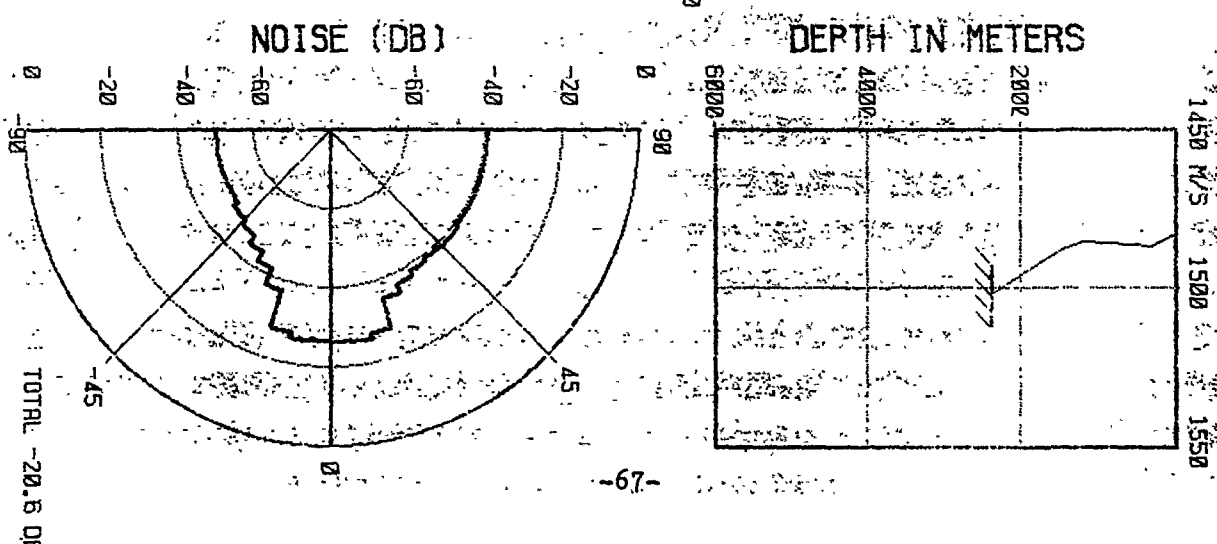
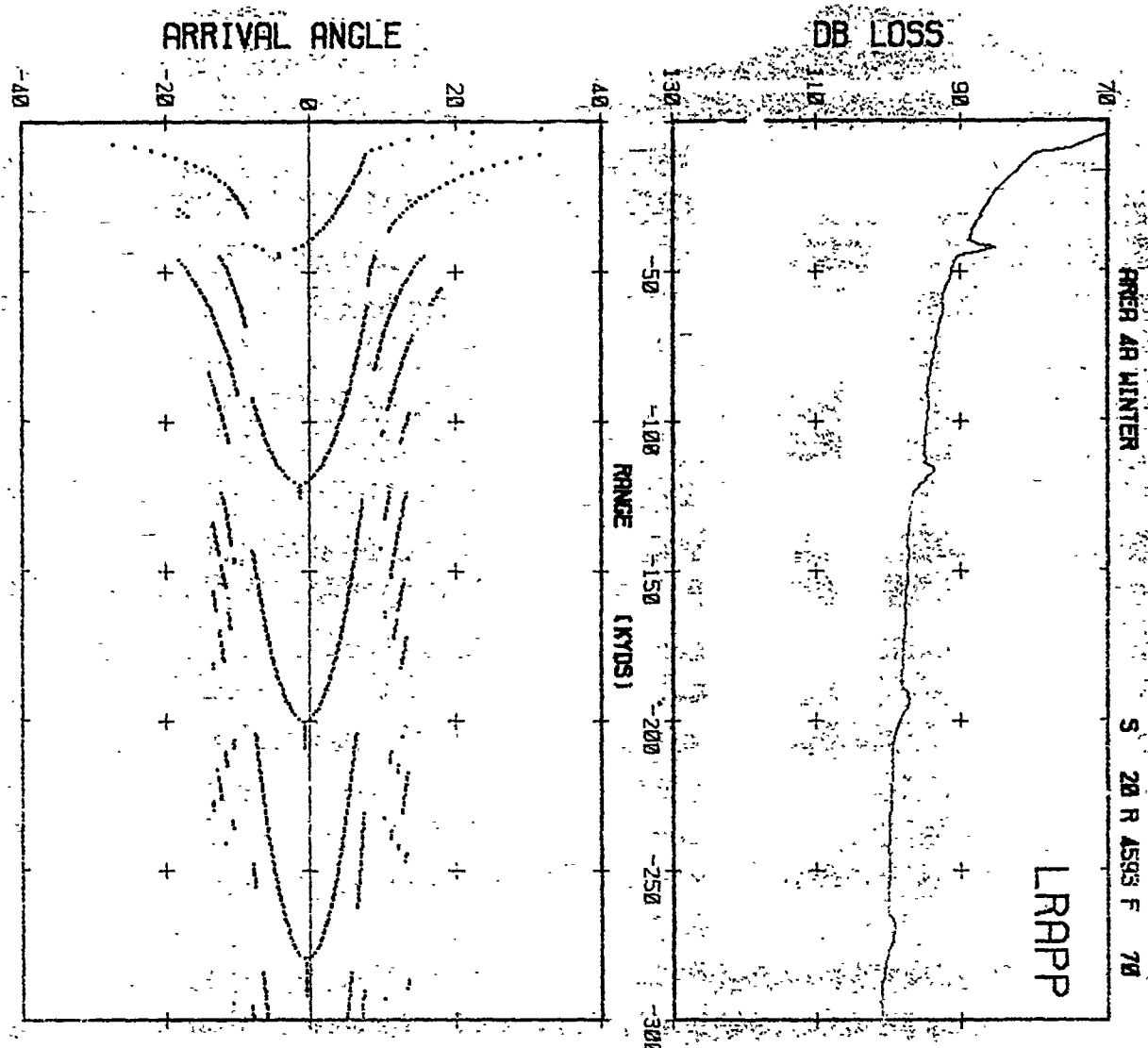


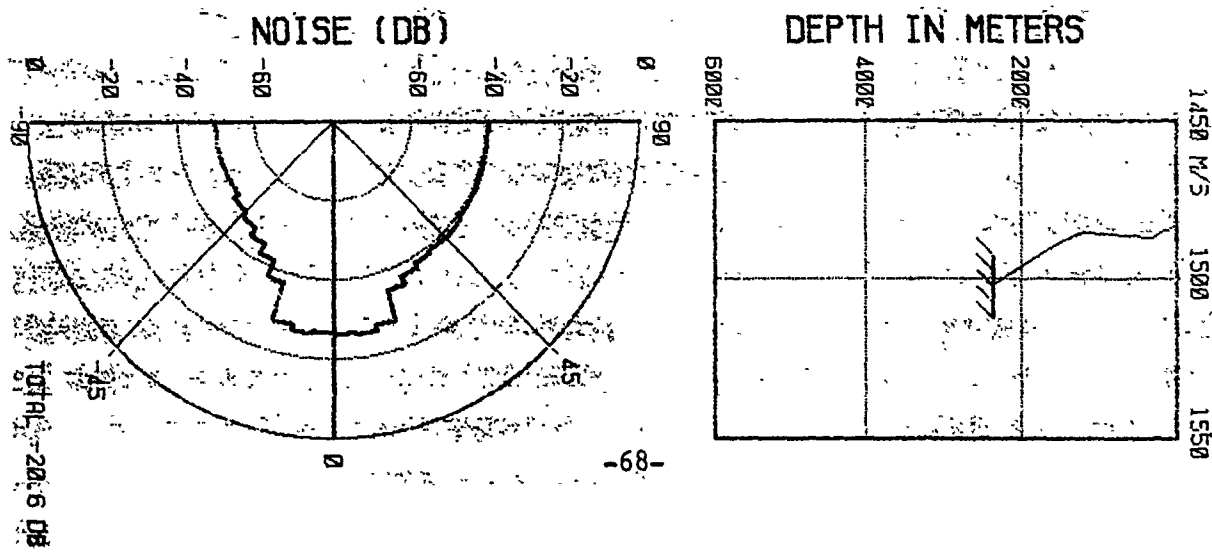
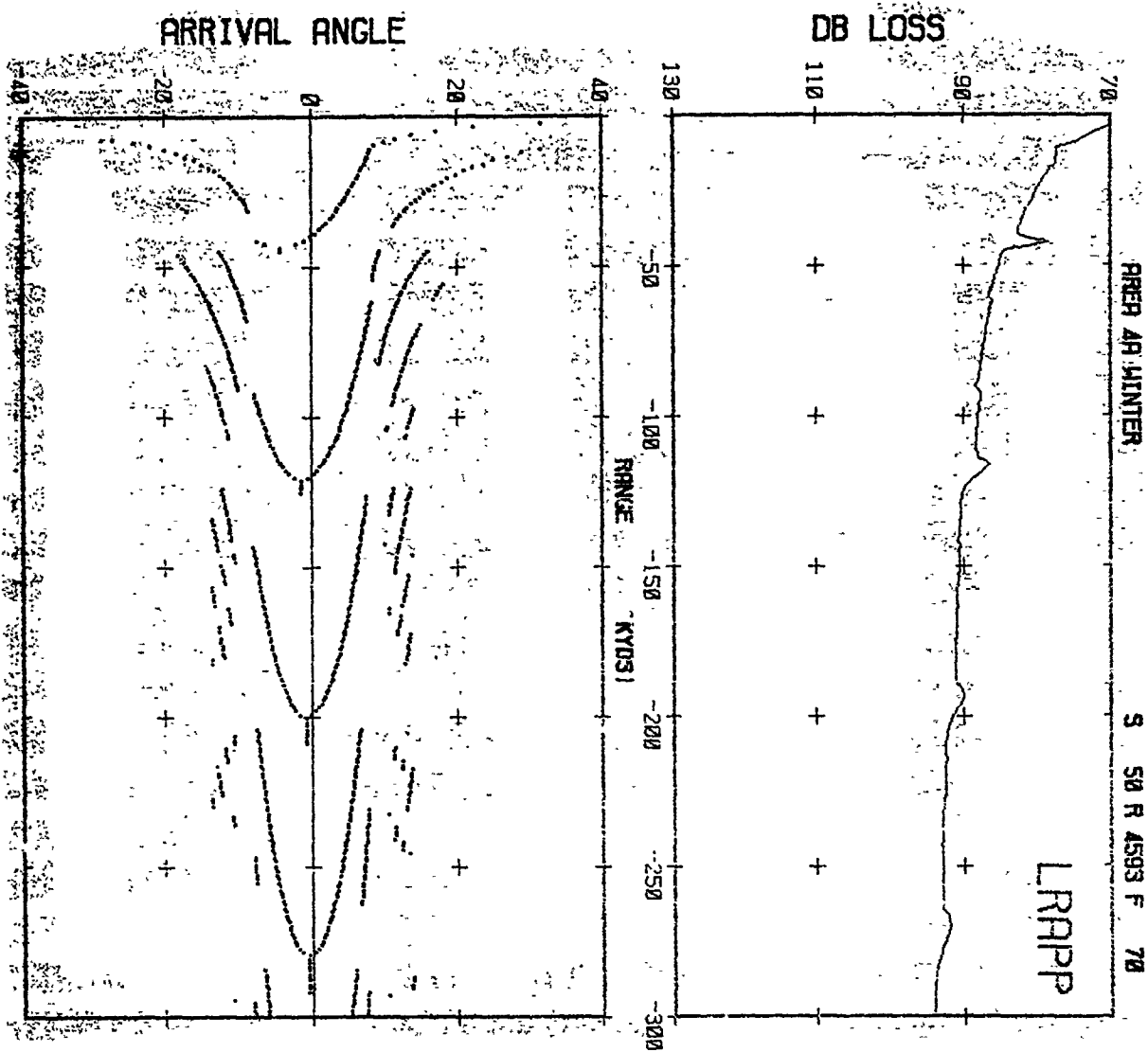


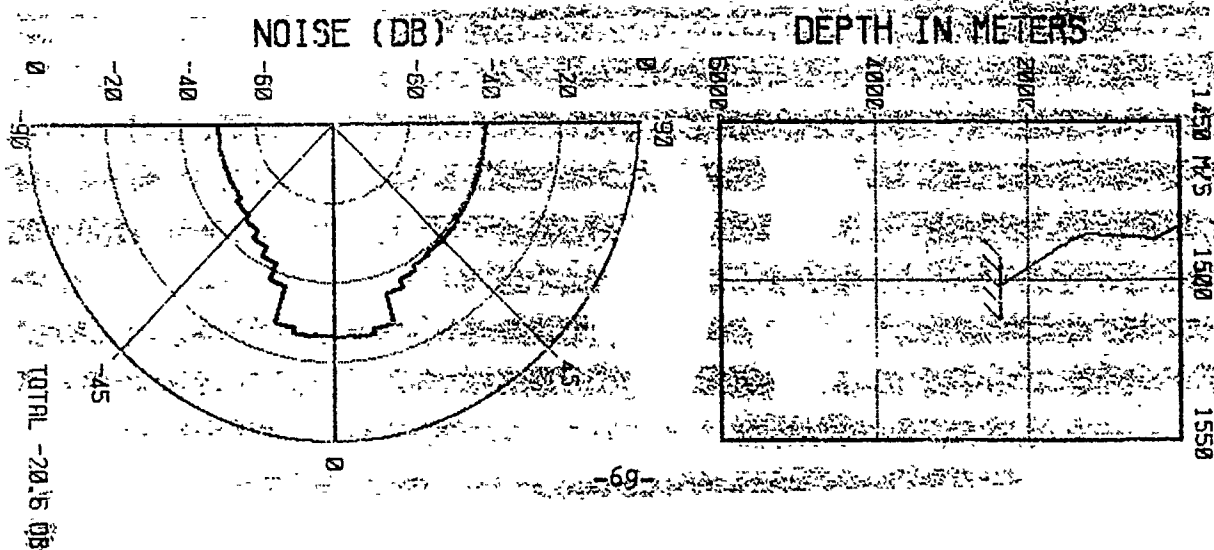
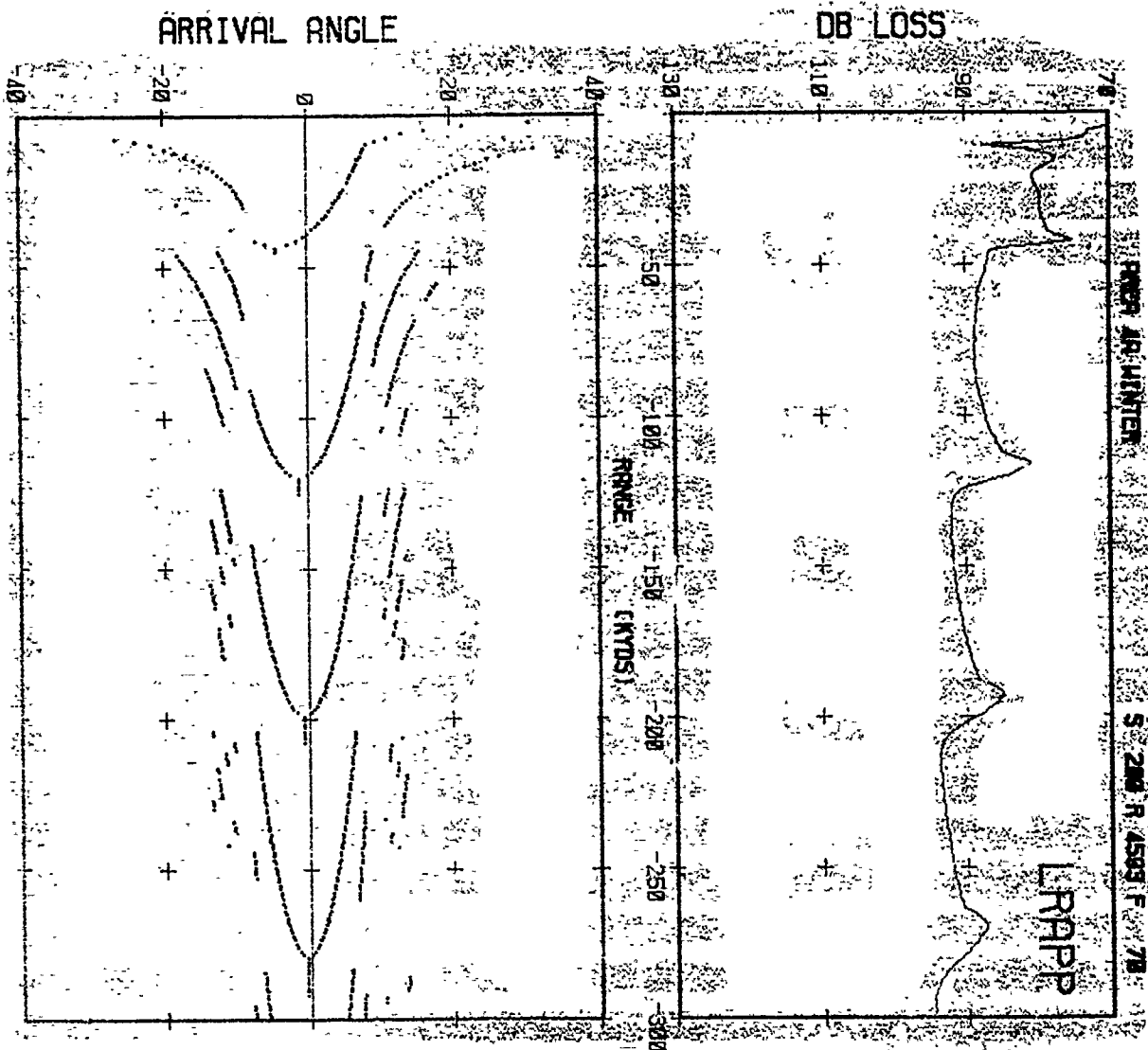




TOTAL -20.9 DB



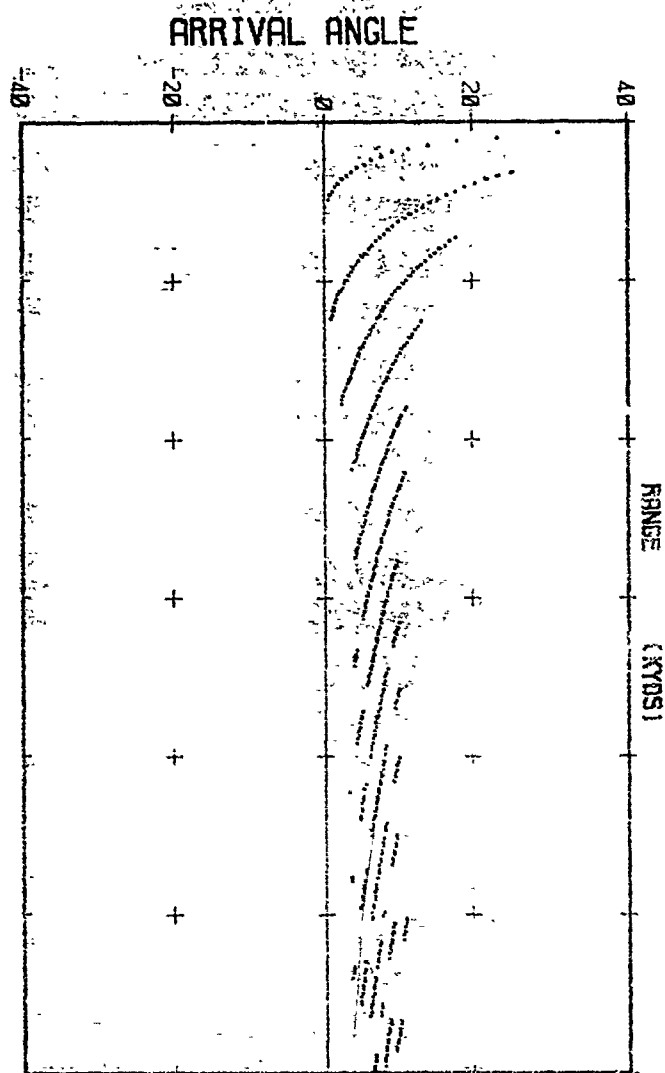
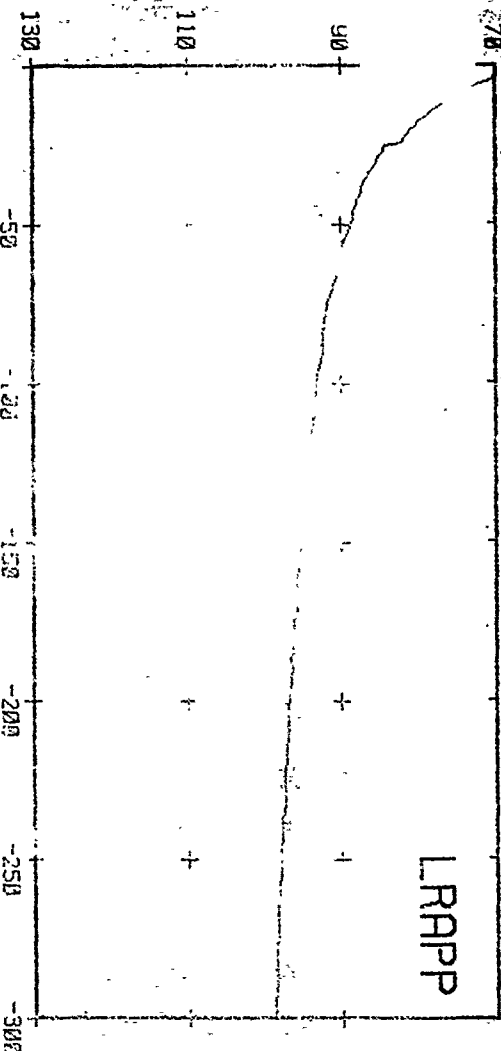




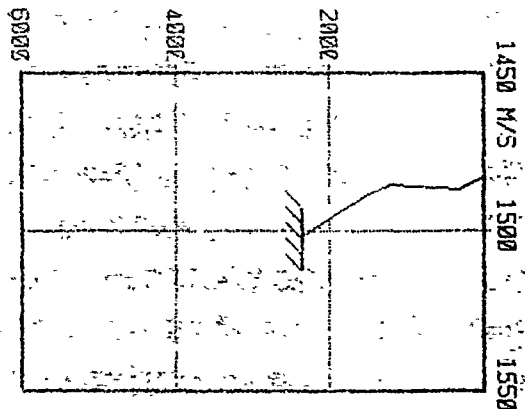
PRER APR WINTER

S 20 R 7798 F 70

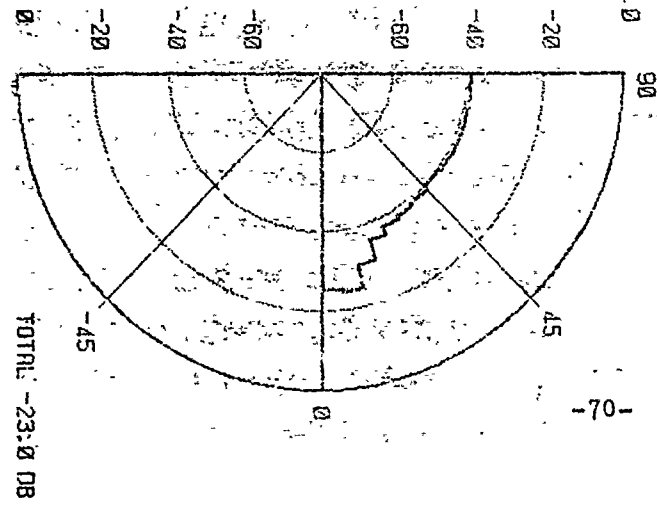
LRAPP



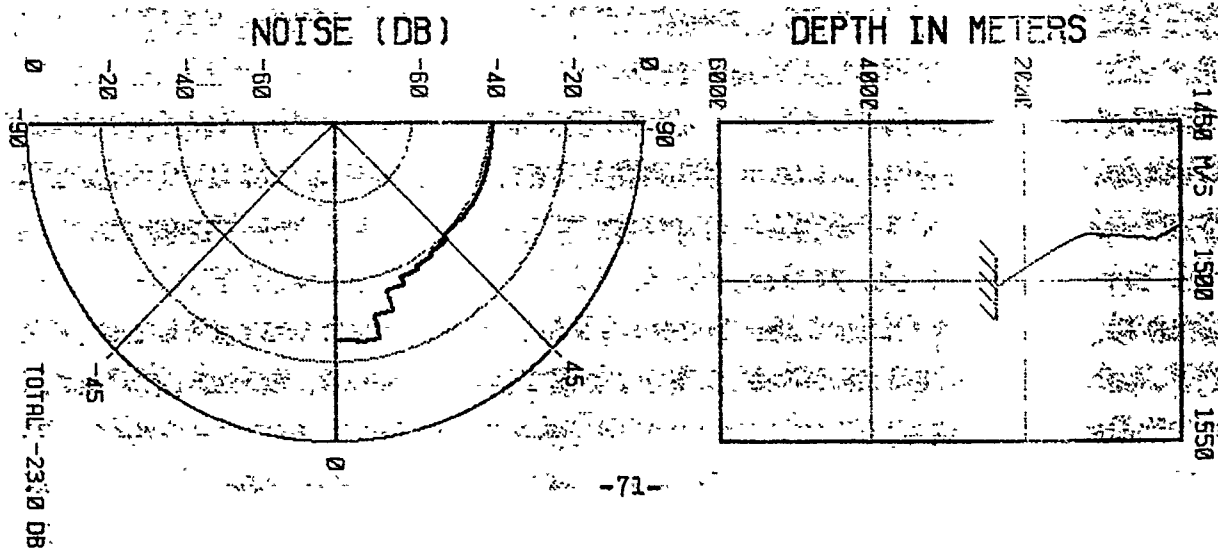
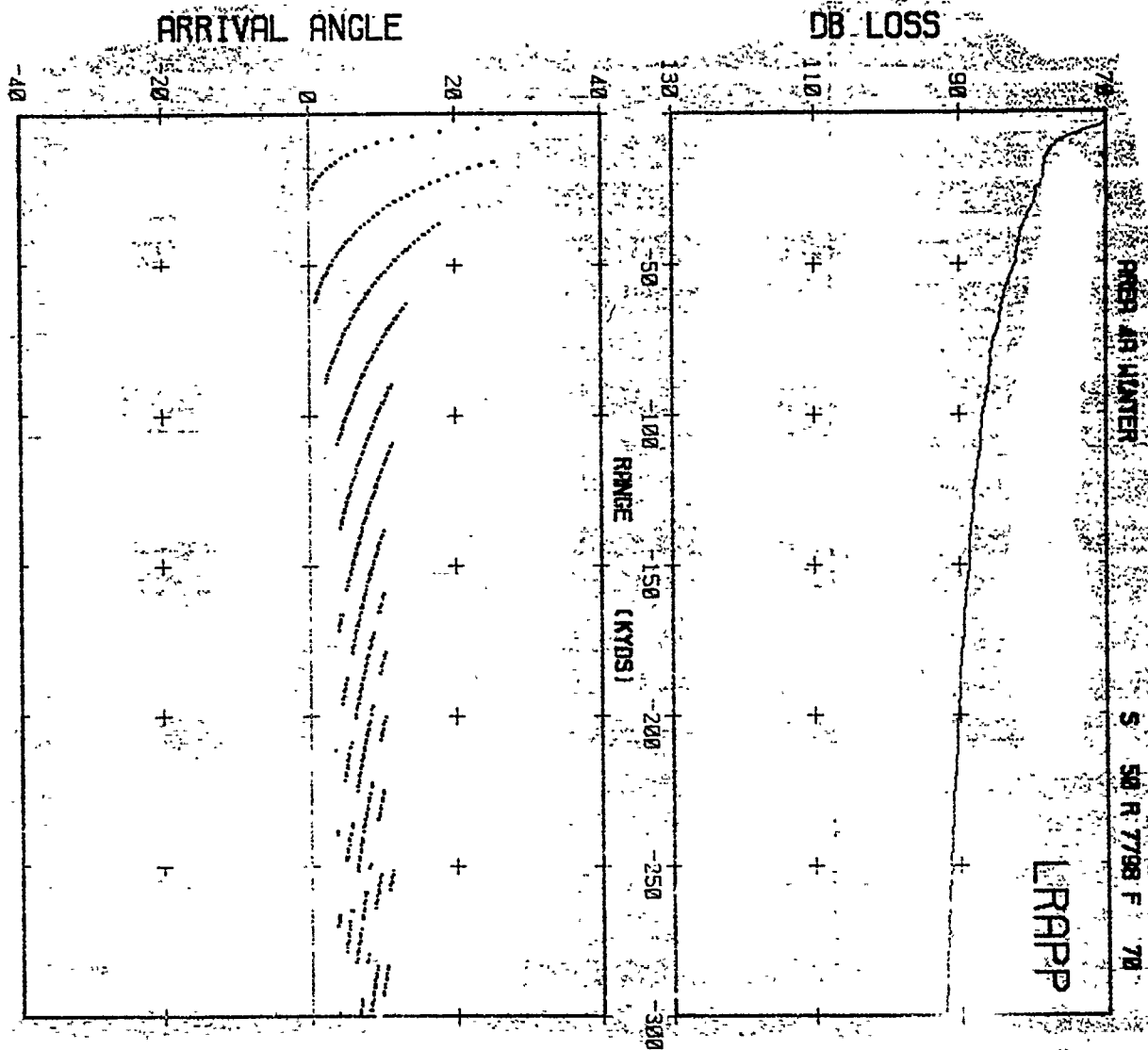
DEPTH IN METERS

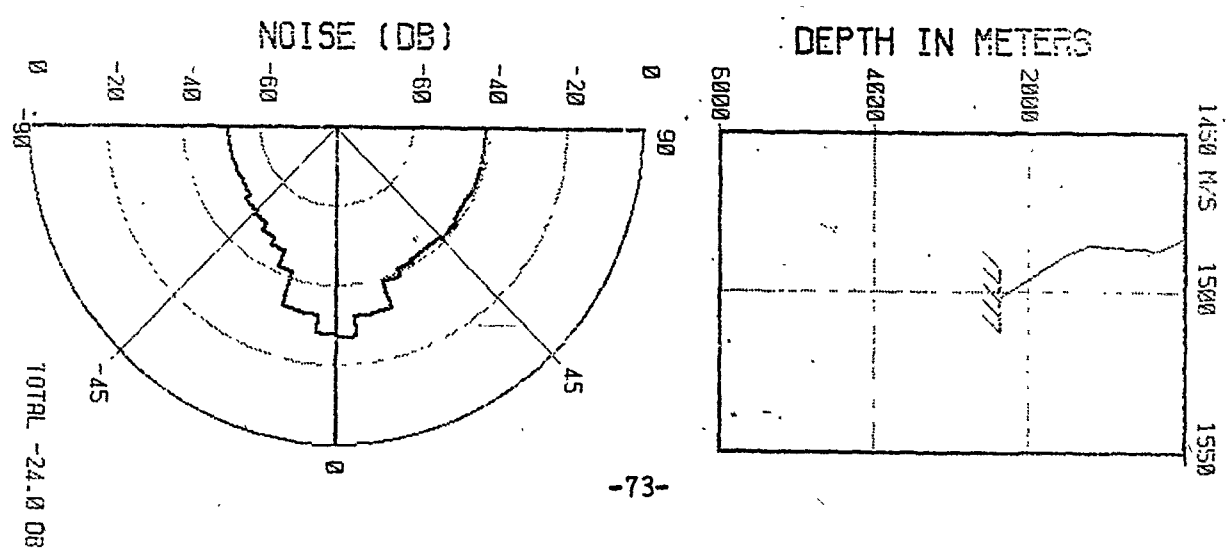
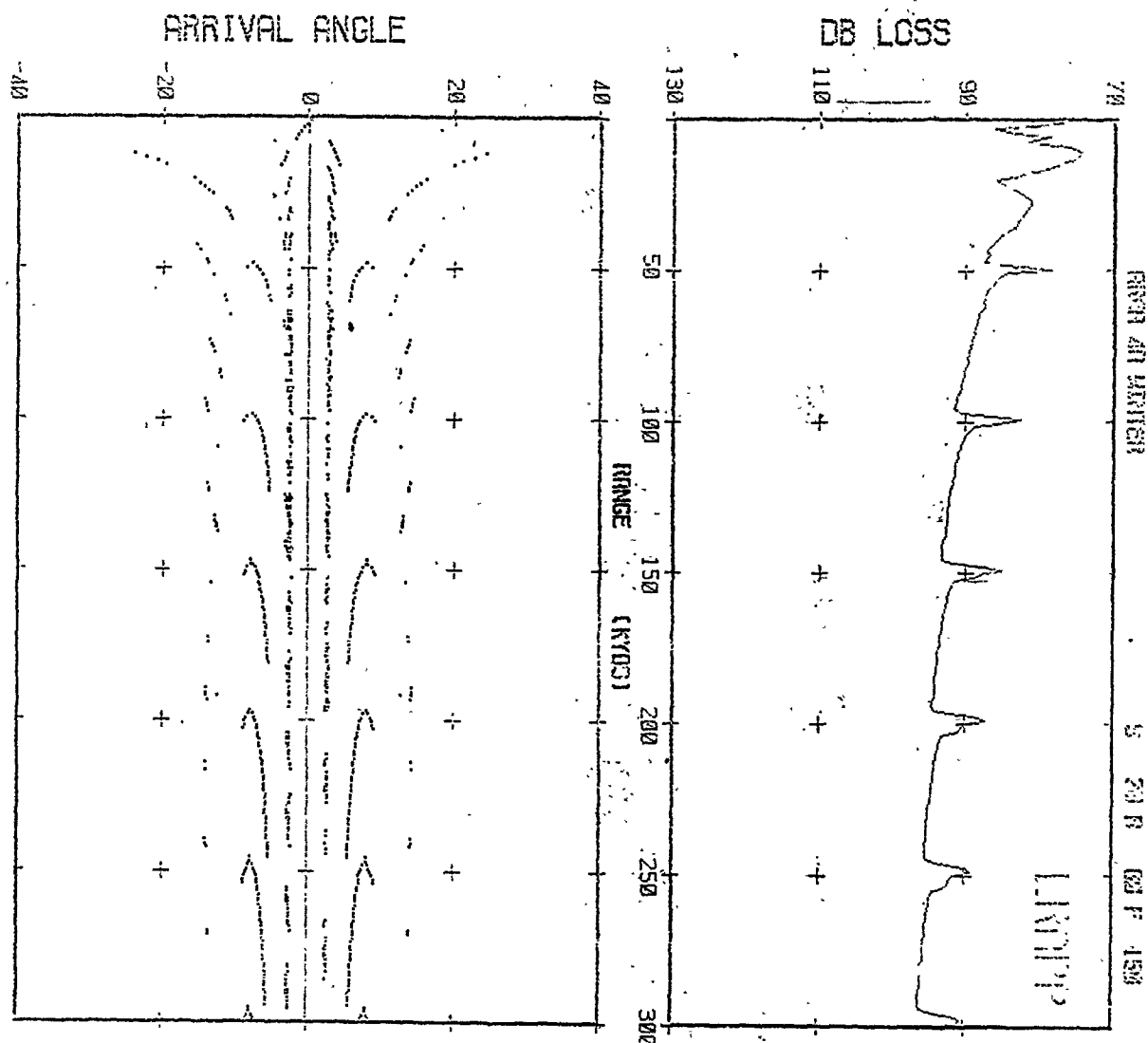


NOISE (DB)



TOTAL -23.0 DB



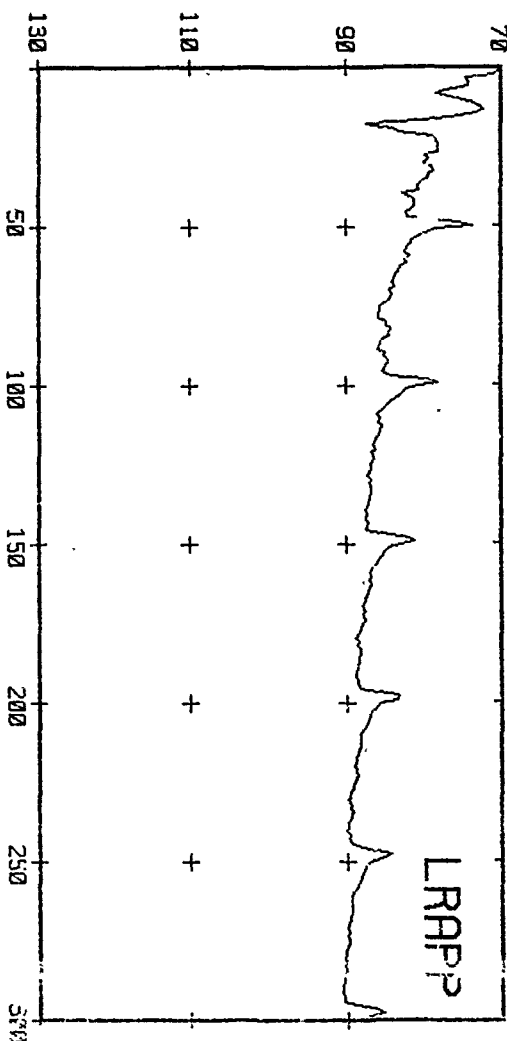


AREA AIR WINTER

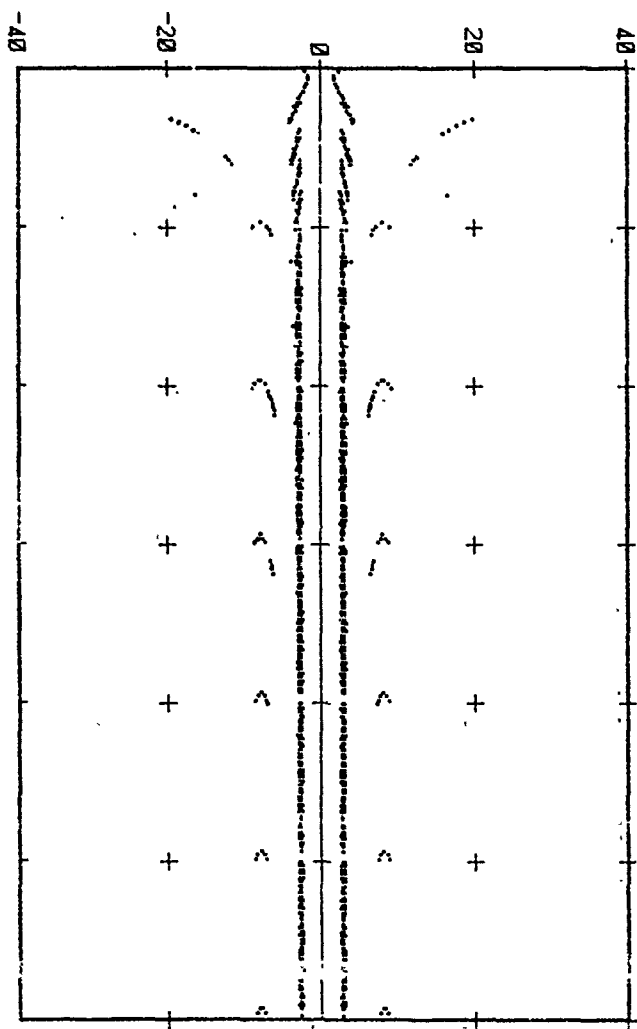
S 200 R 60 F 15°

1450 H/5 1500 1550

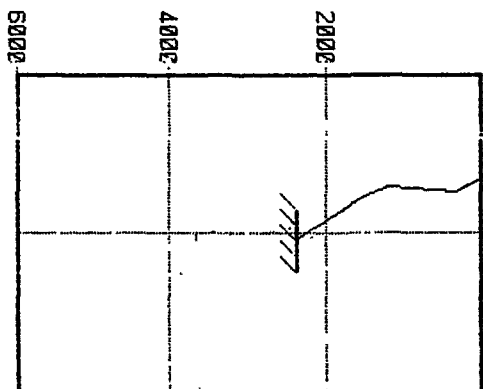
DB LOSS



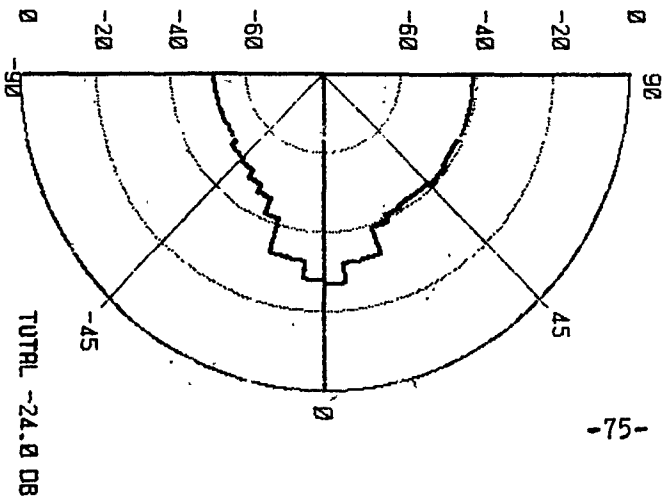
ARRIVAL ANGLE

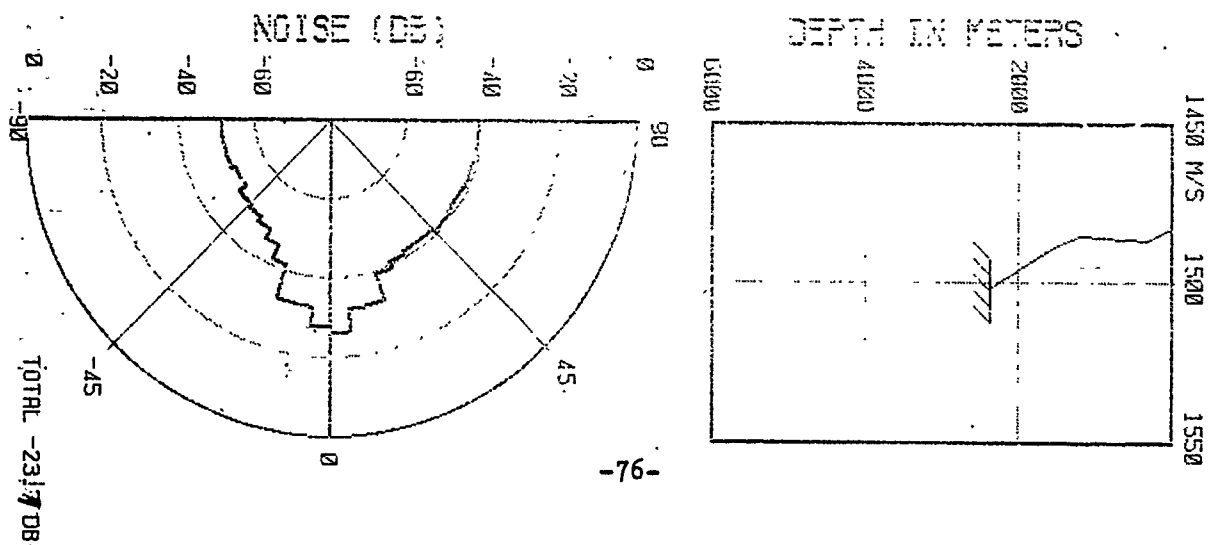
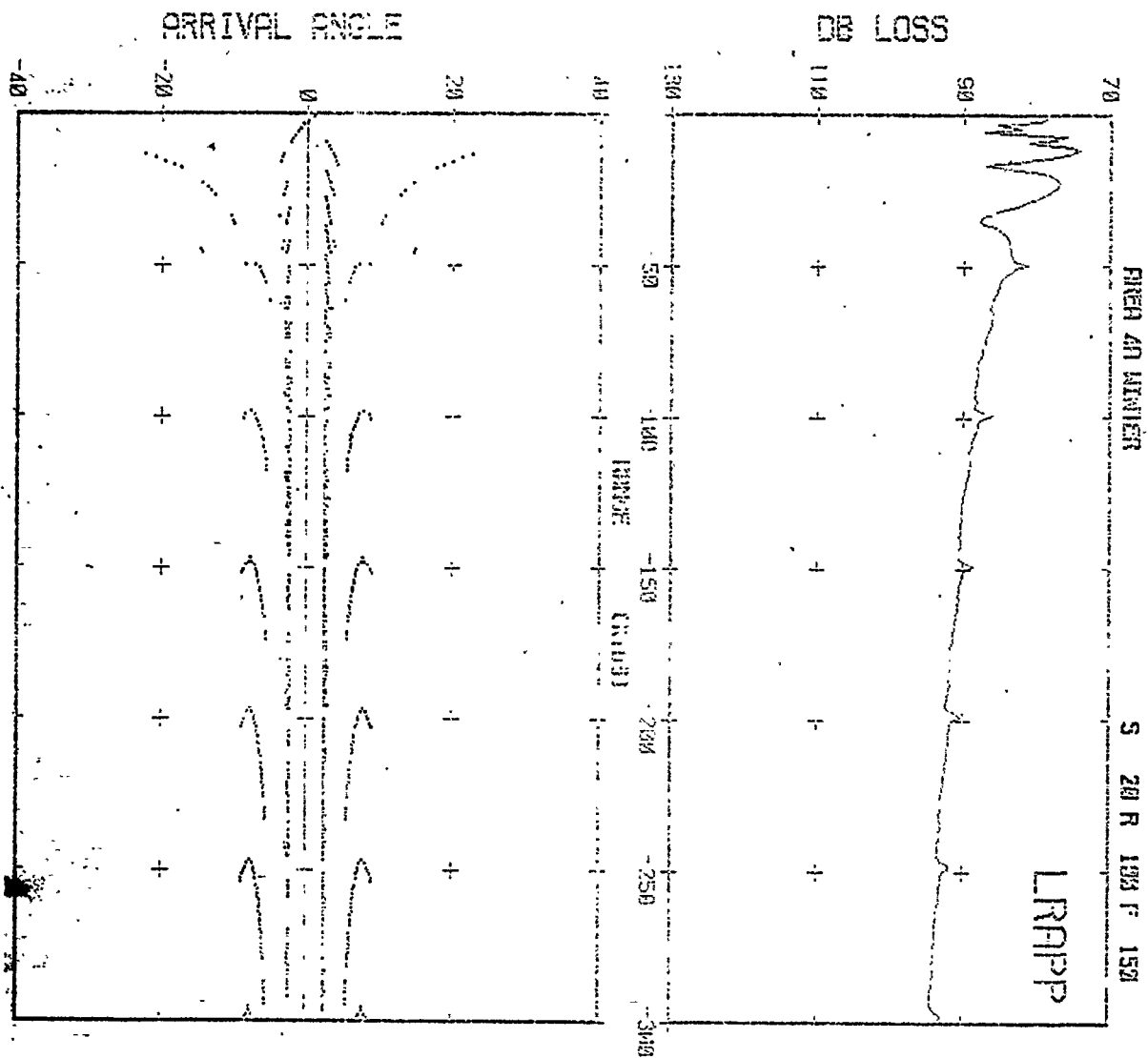


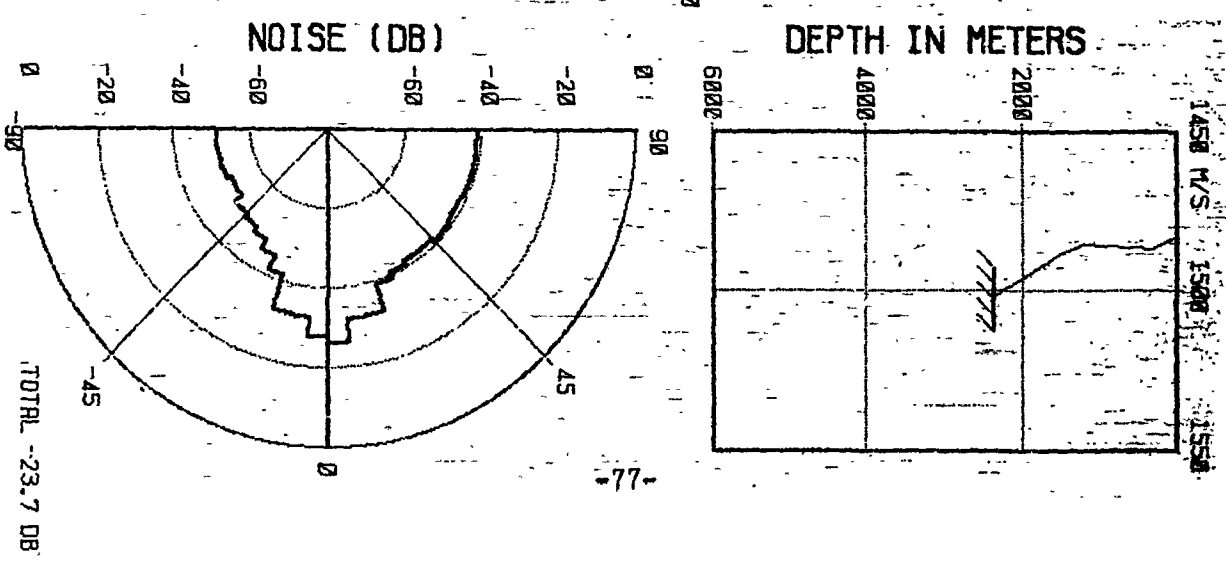
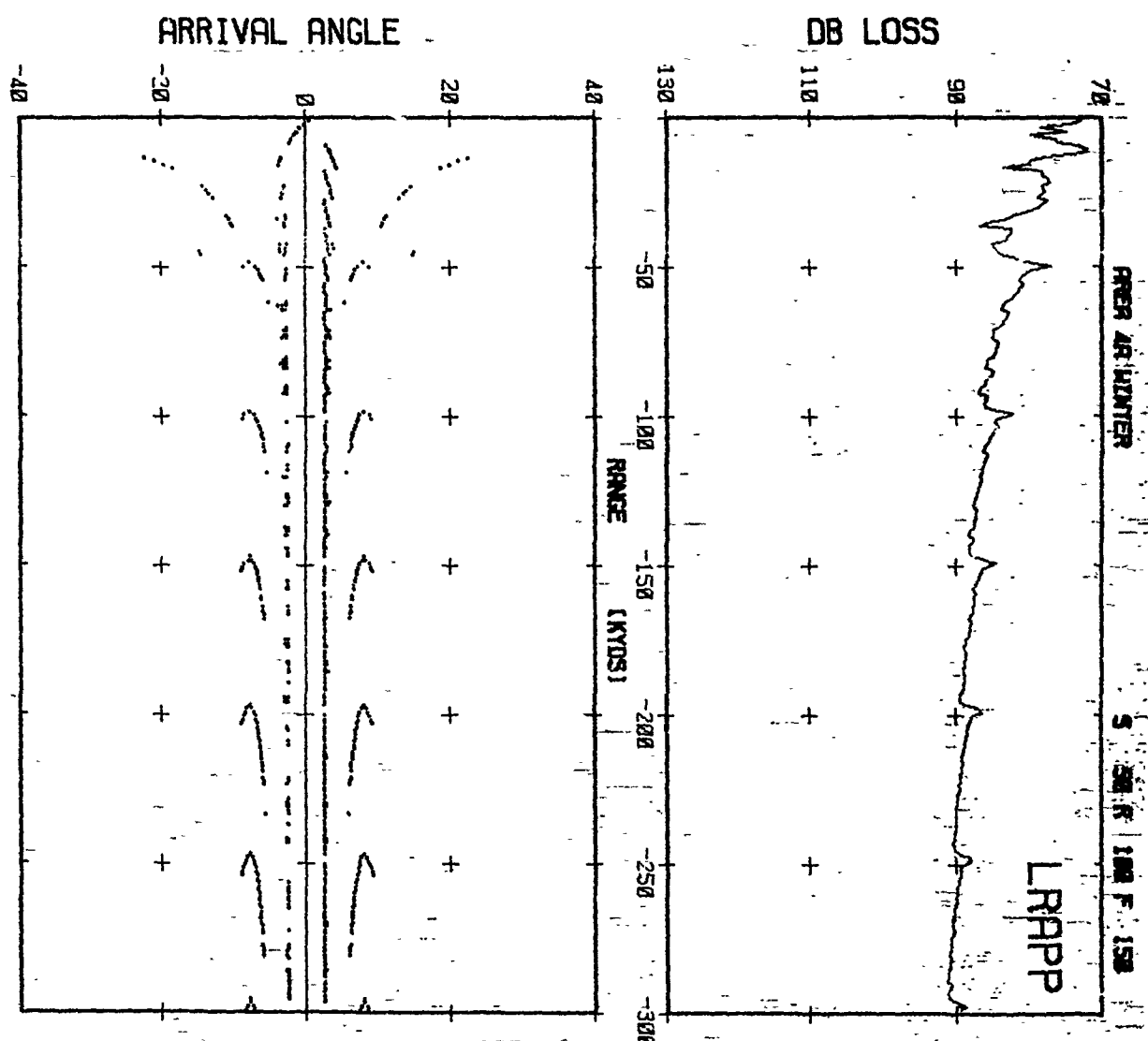
DEPTH IN METERS

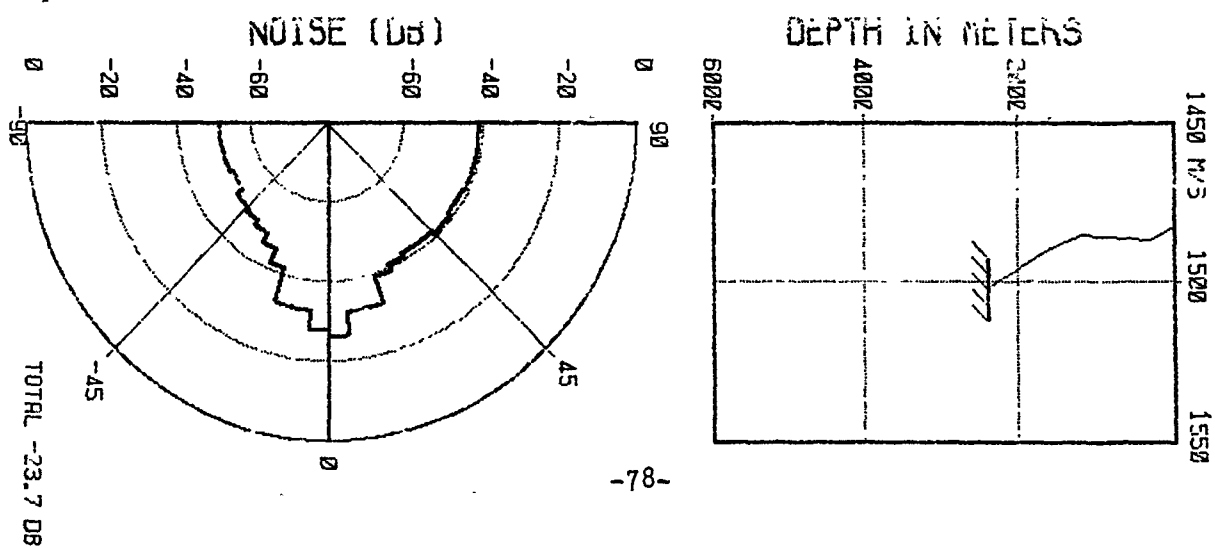
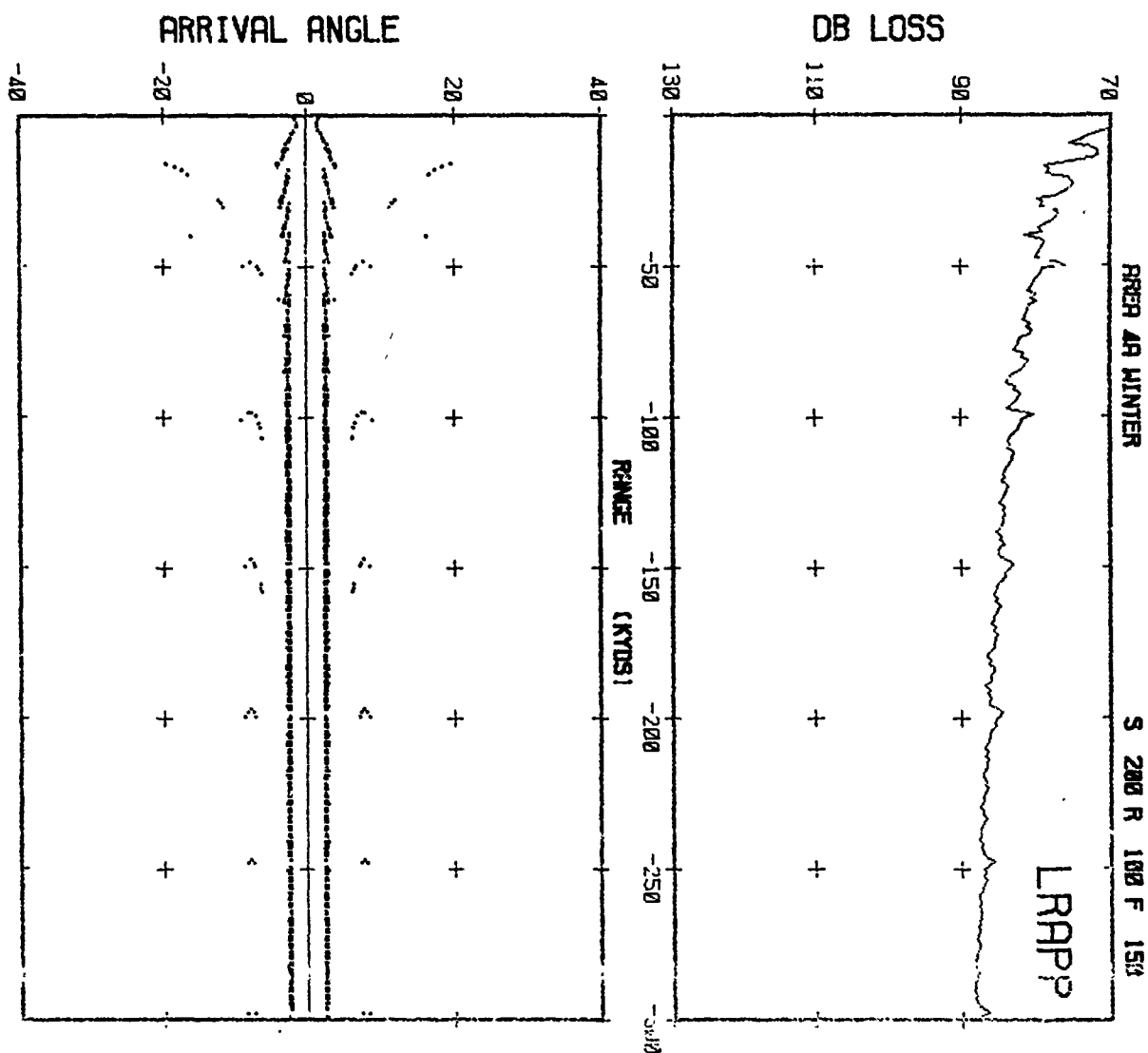


NOISE (DB)









FREQ 40 HZ

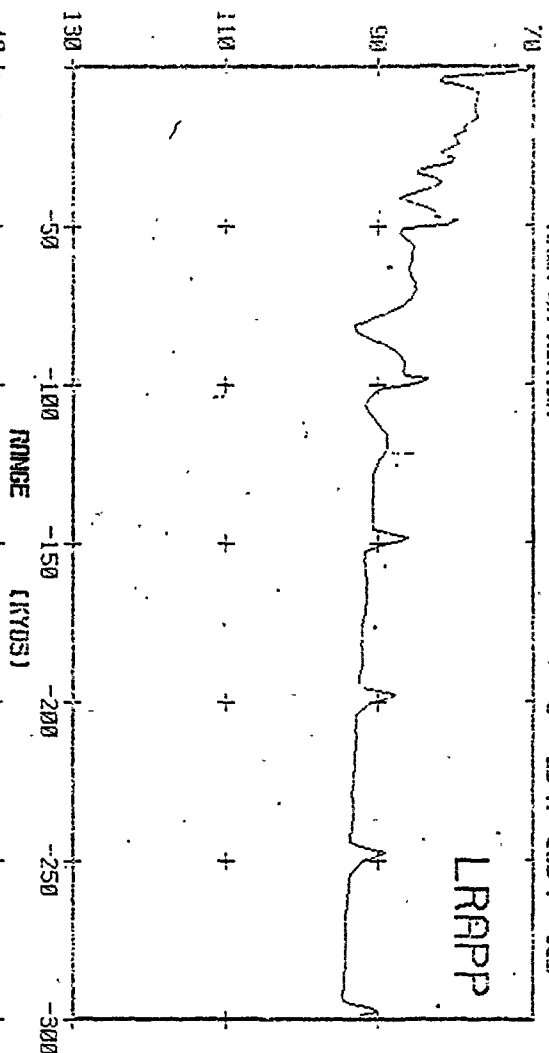
S 20 R 300 F 150

1450 M/S

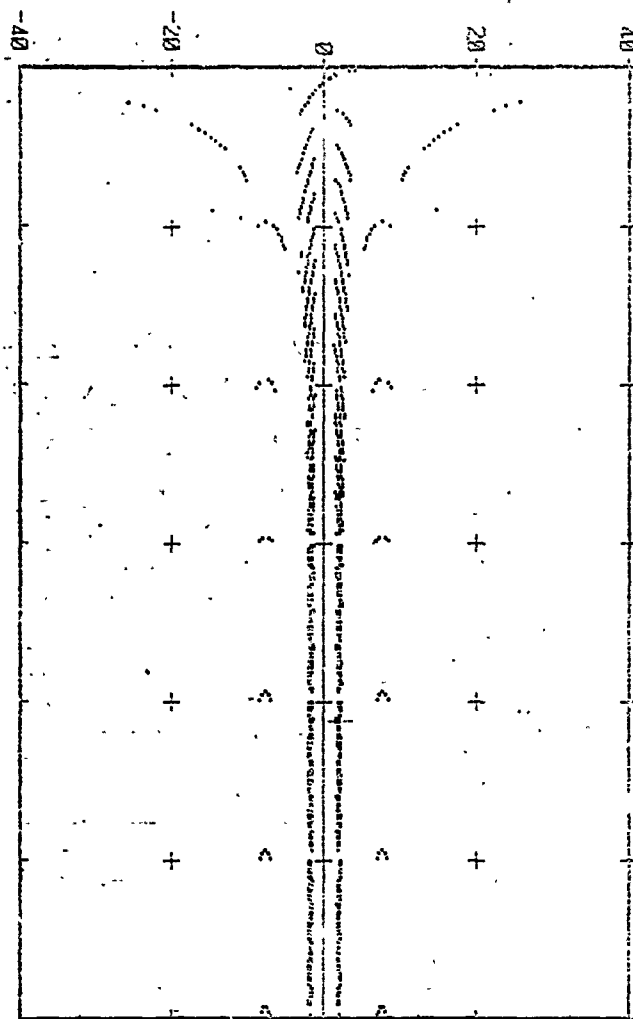
1500

1550

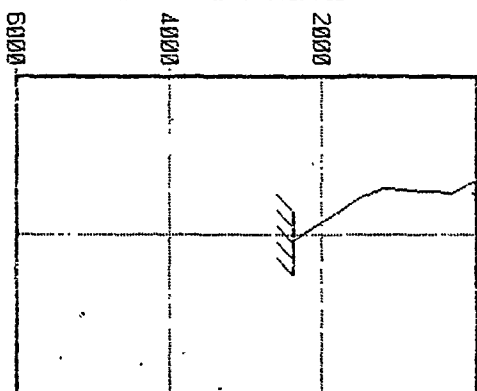
DB LOSS



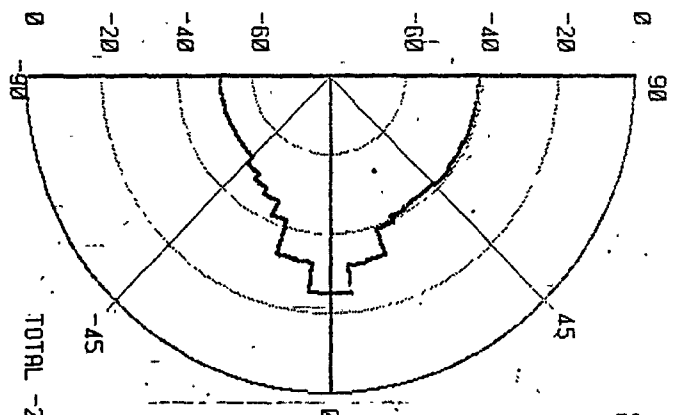
ARRIVAL ANGLE



DEPTH IN METERS



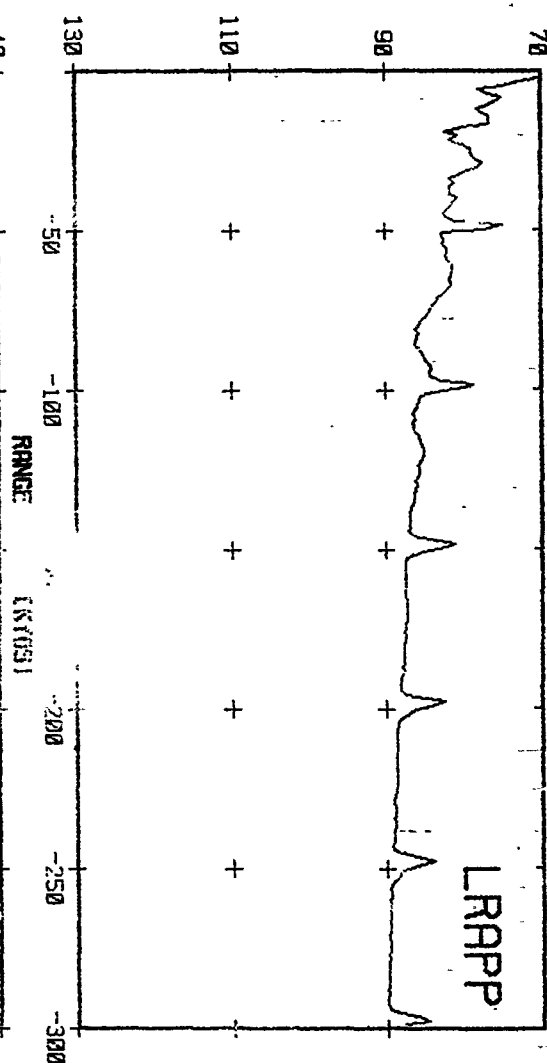
NOISE (DB)



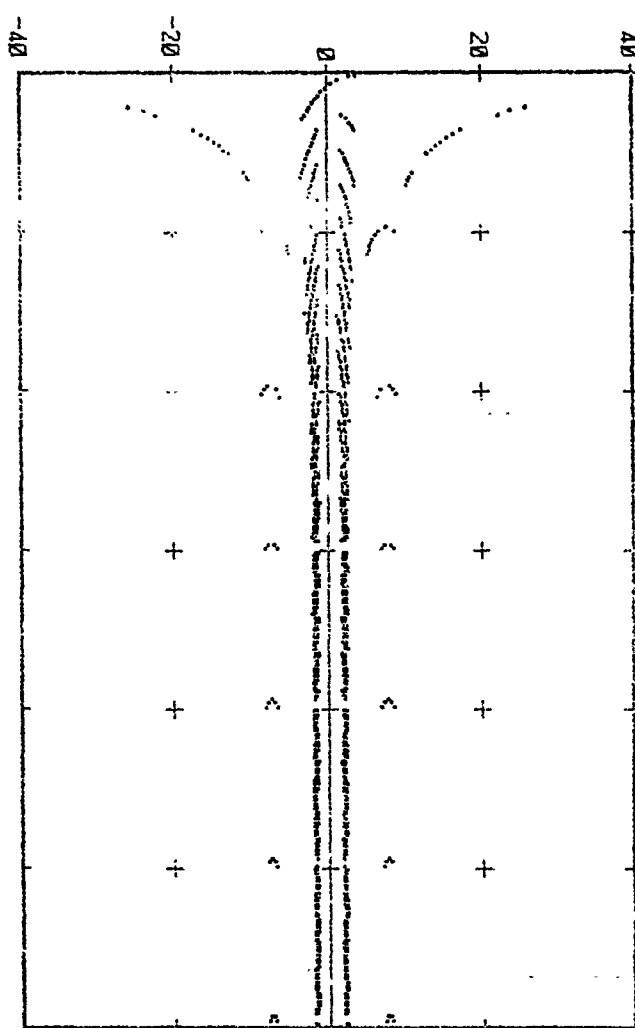
PRER 4R HINTER

S 50 R 300 F 150

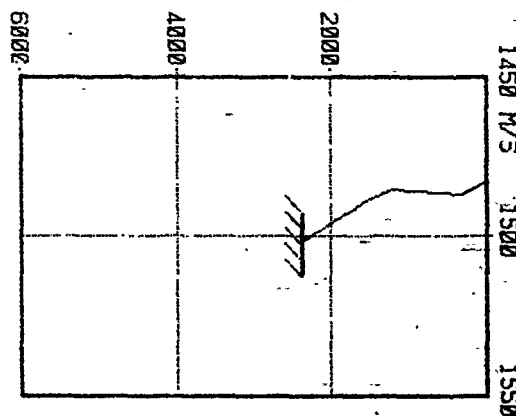
DB LOSS



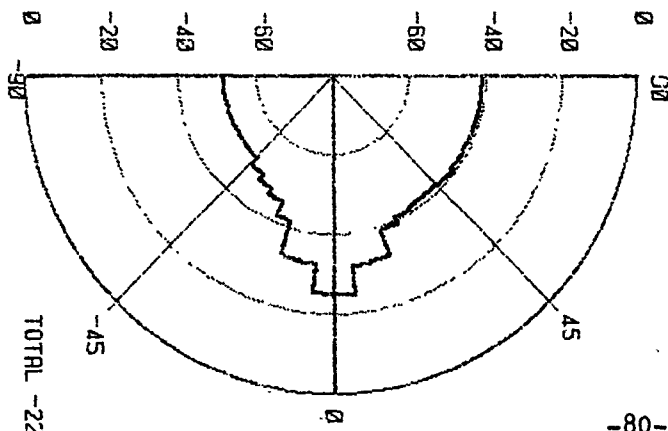
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

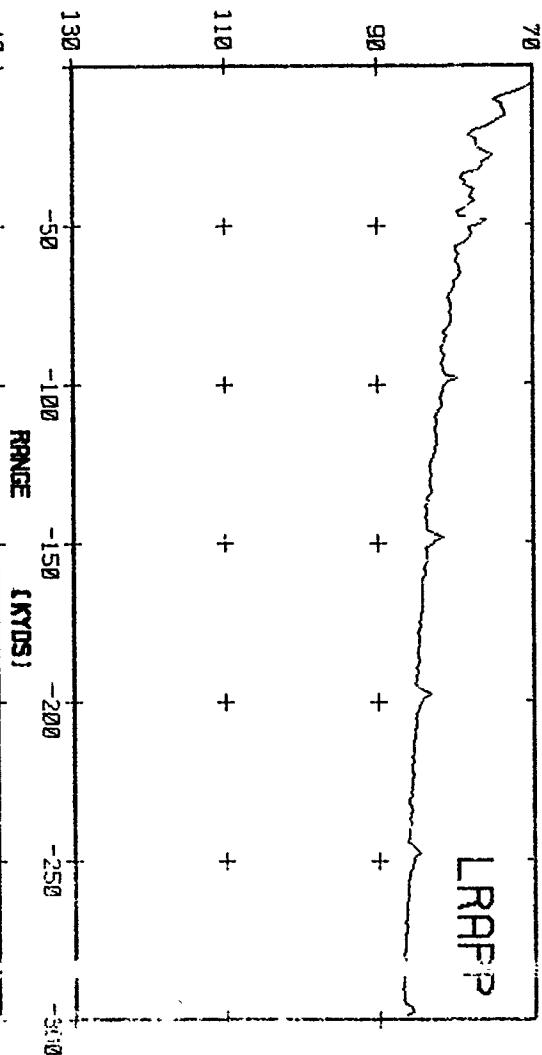


TOTAL -22.4 DB

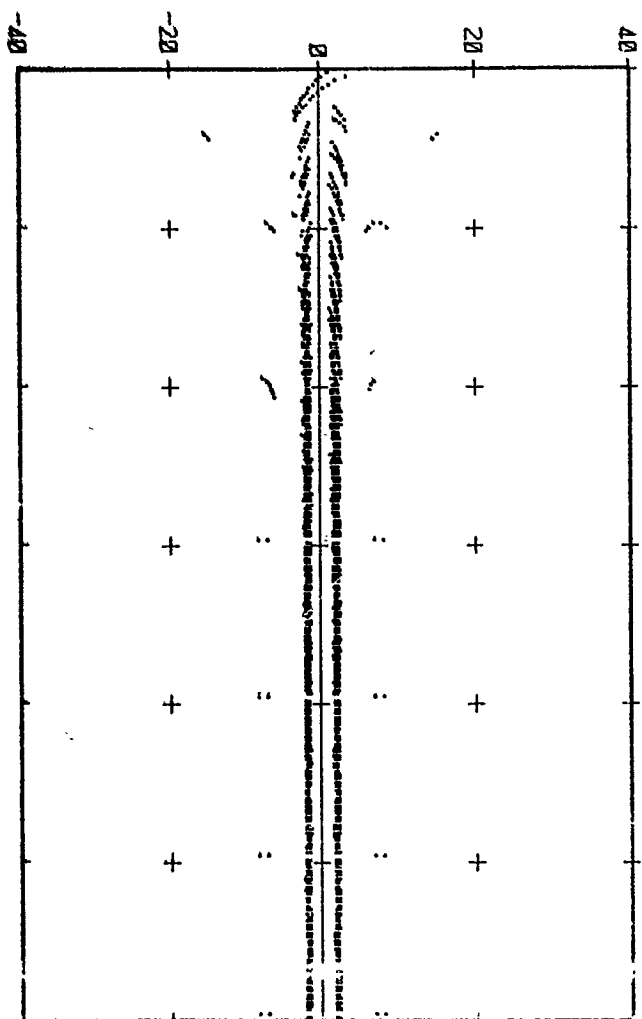
AREA 4R WINTER

S 280 R 300 F 152

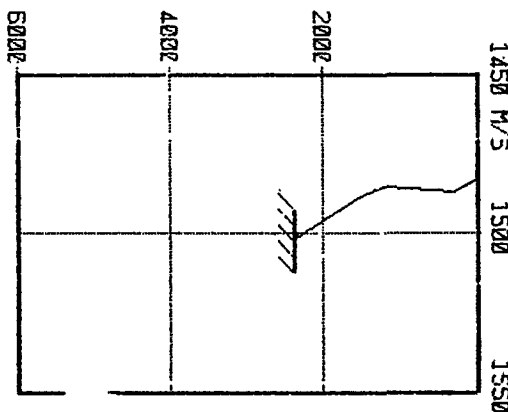
DB LOSS



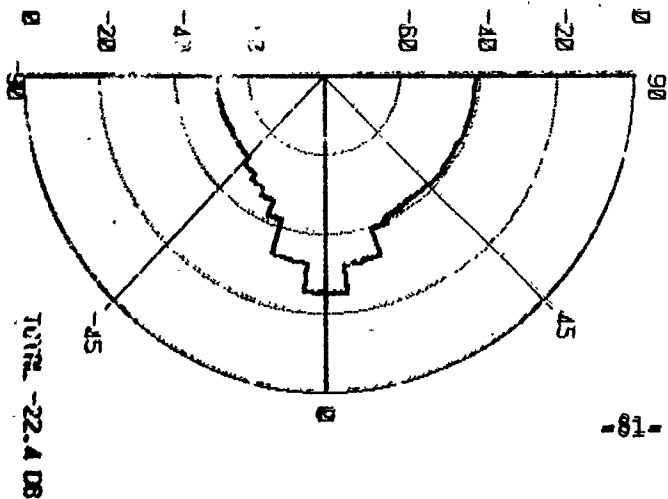
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

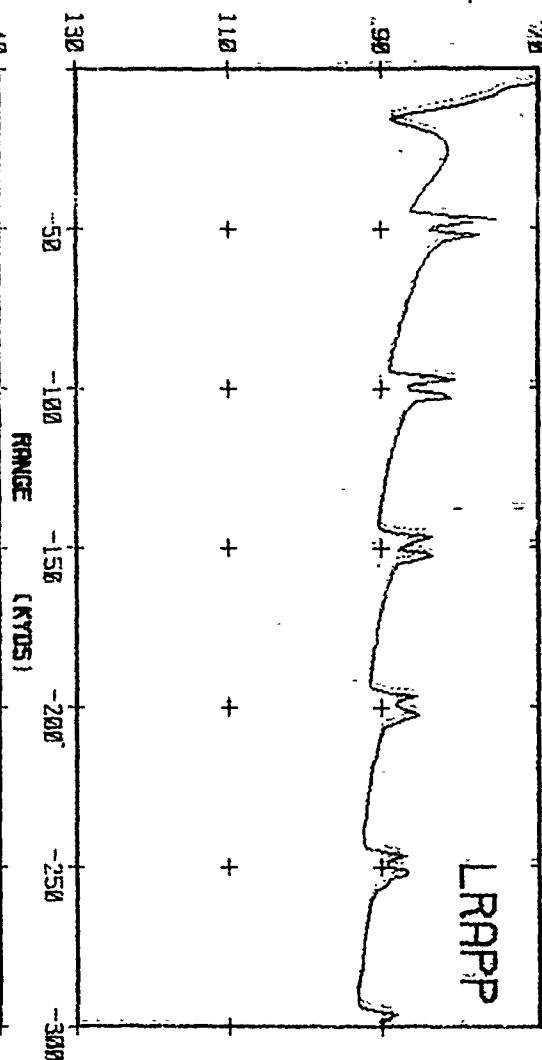


RIVER AIR JUNCTION

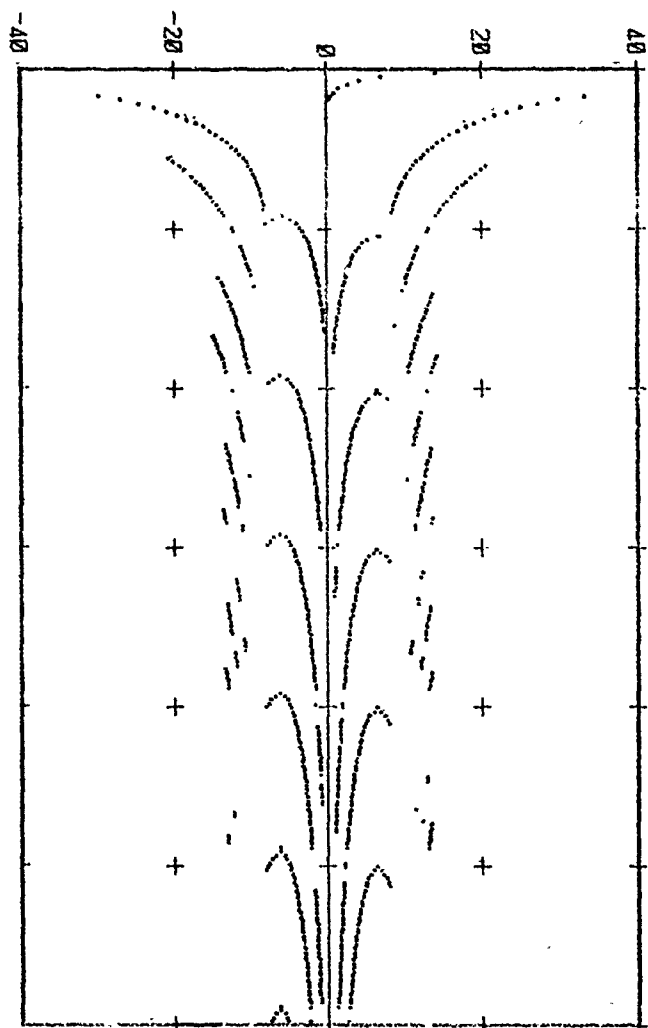
8 300 IN 1000 F 150

LRAPP

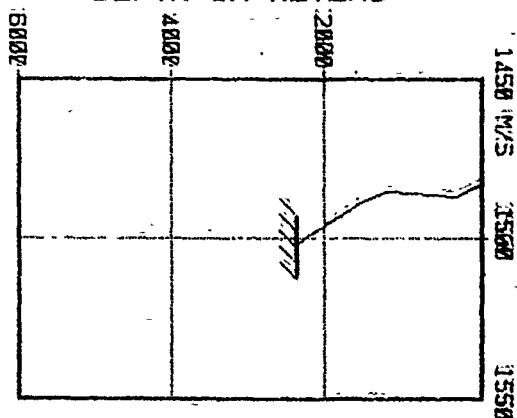
DB LOSS



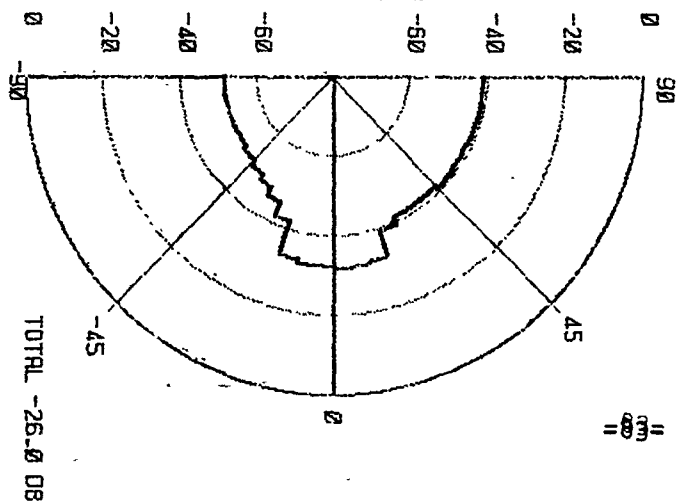
ARRIVAL ANGLE



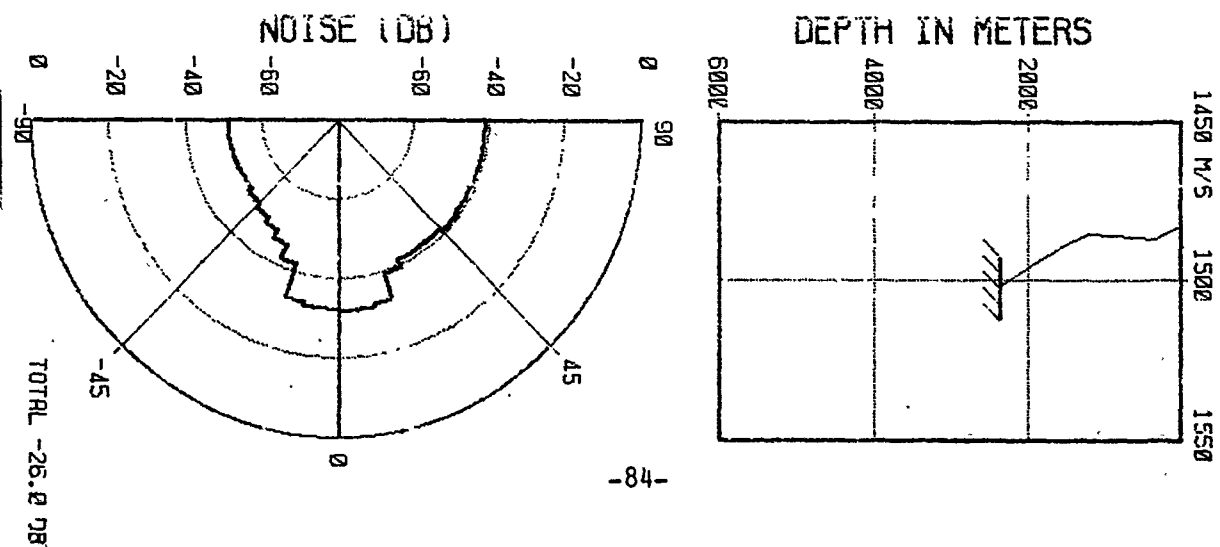
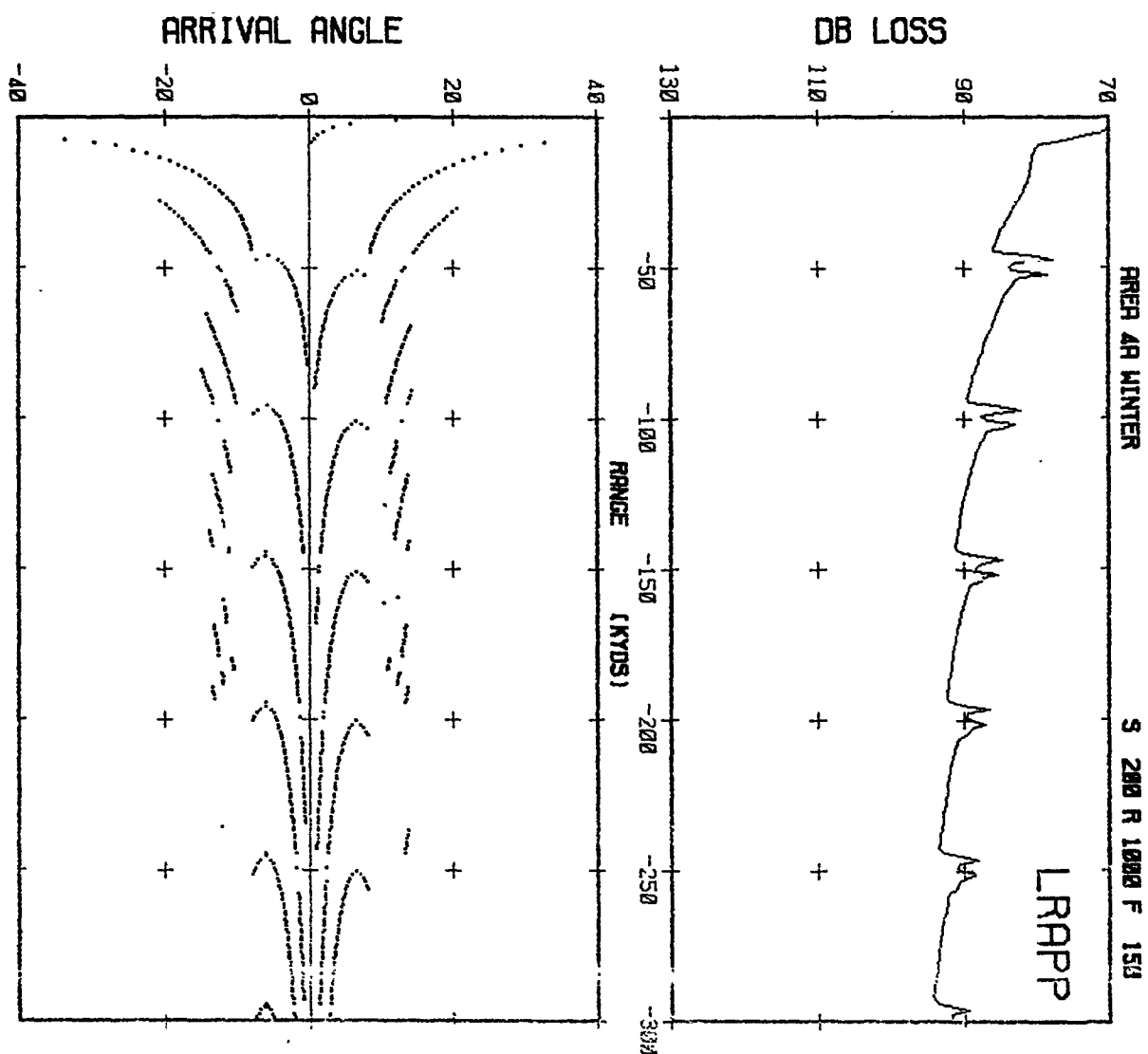
DEPTH IN METERS



NOISE (DB)



TOTAL -26.0 DB

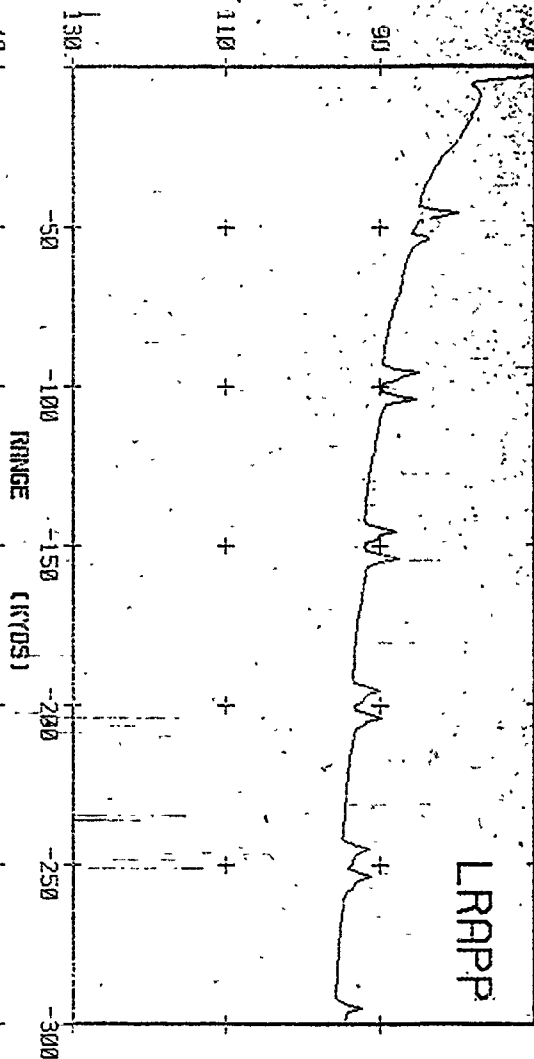


FREE AIR WINTER

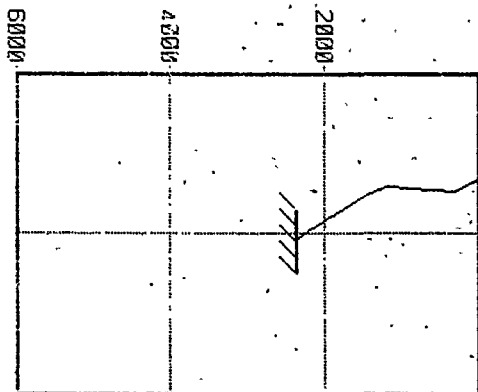
S 20 R 1500 F 1150

1450 M/S 1500 1550

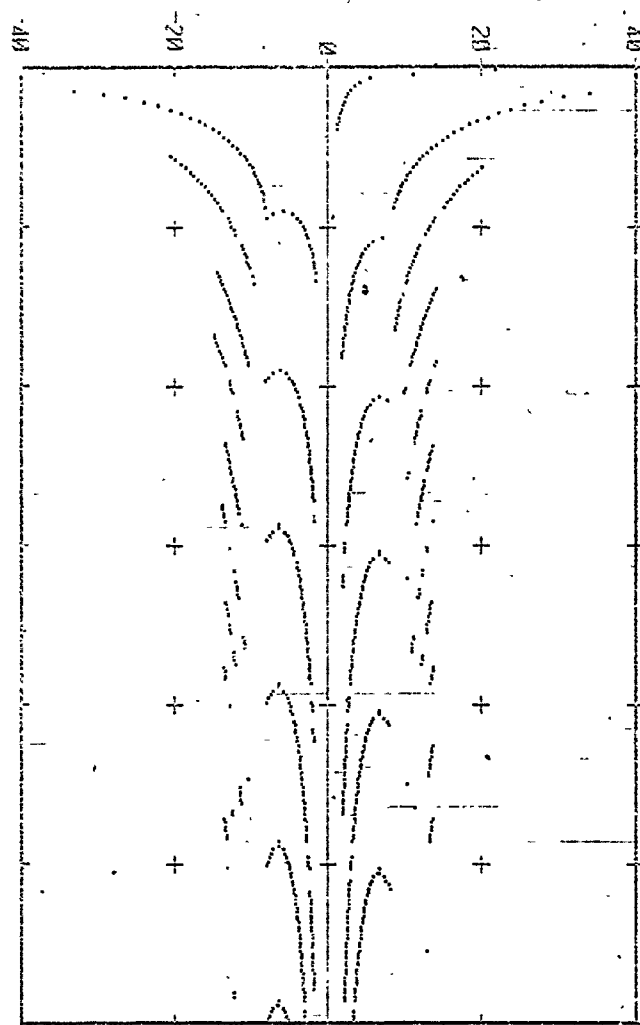
DB LOSS



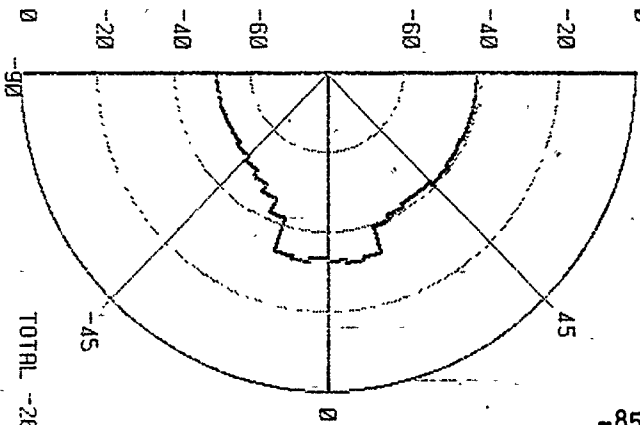
DEPTH IN METERS



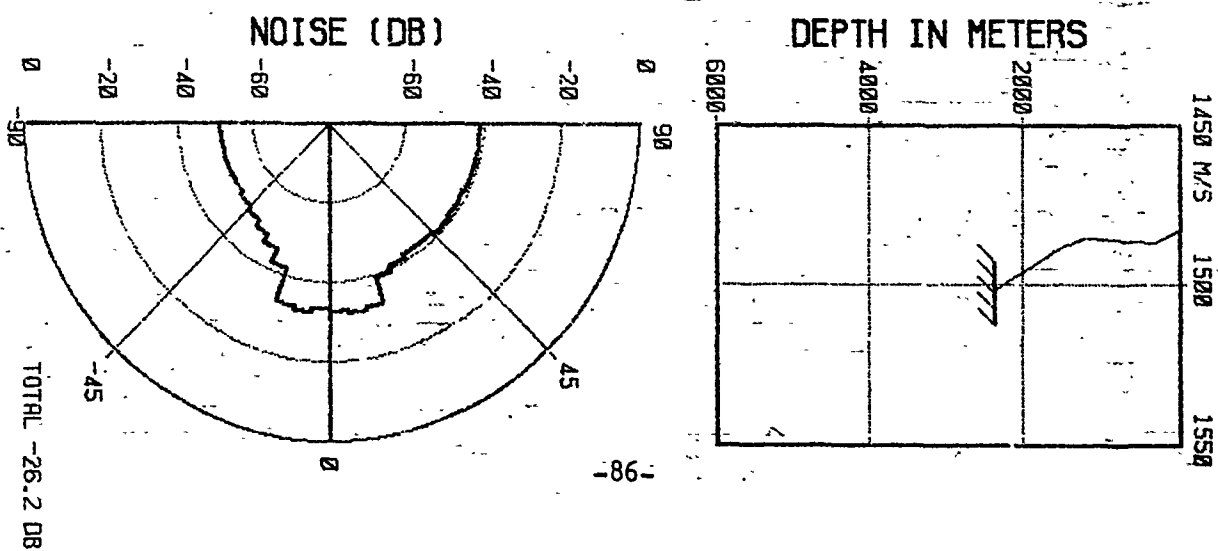
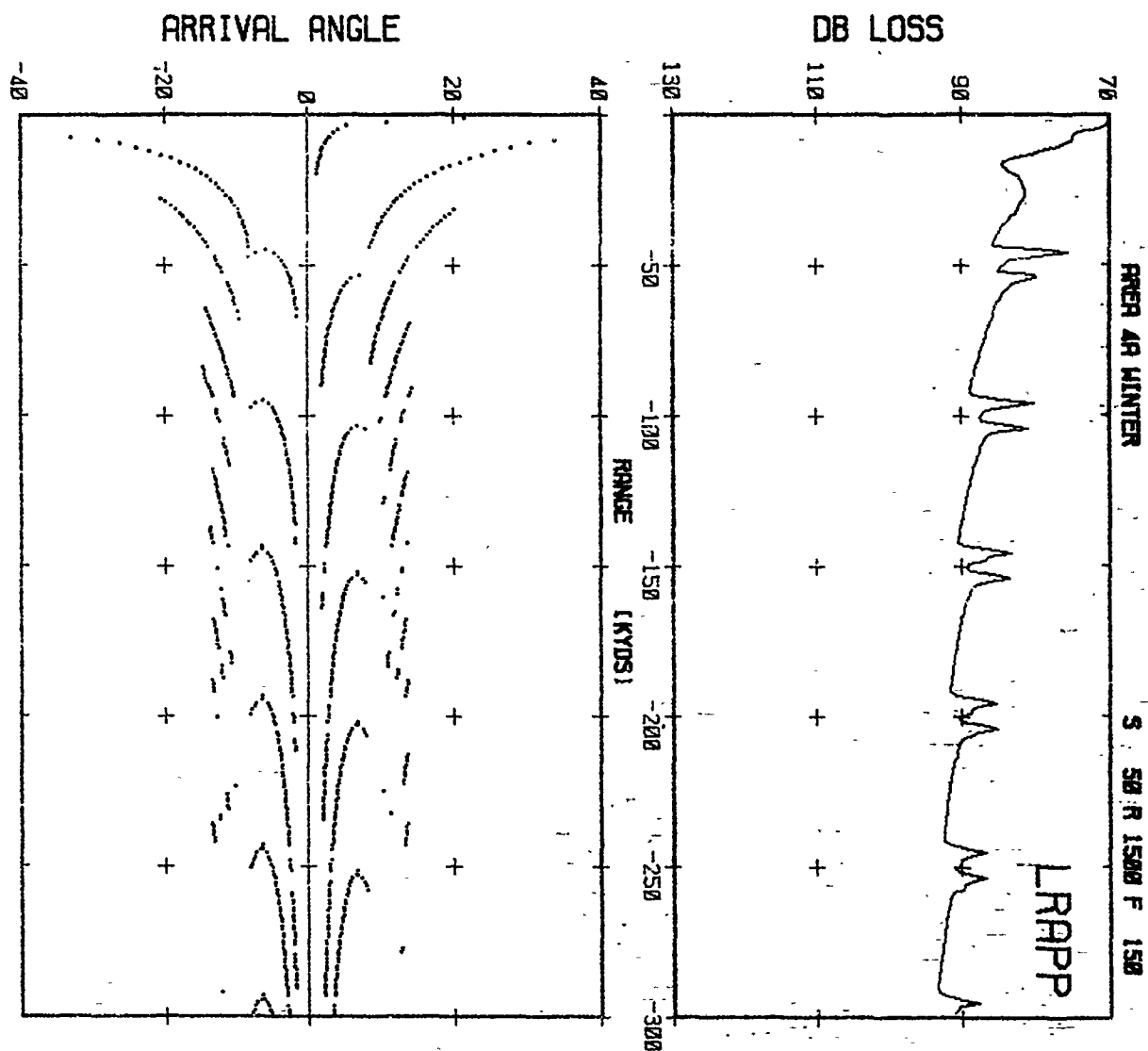
ARRIVAL ANGLE



NOISE (DB)



TOTAL -26.2 DB

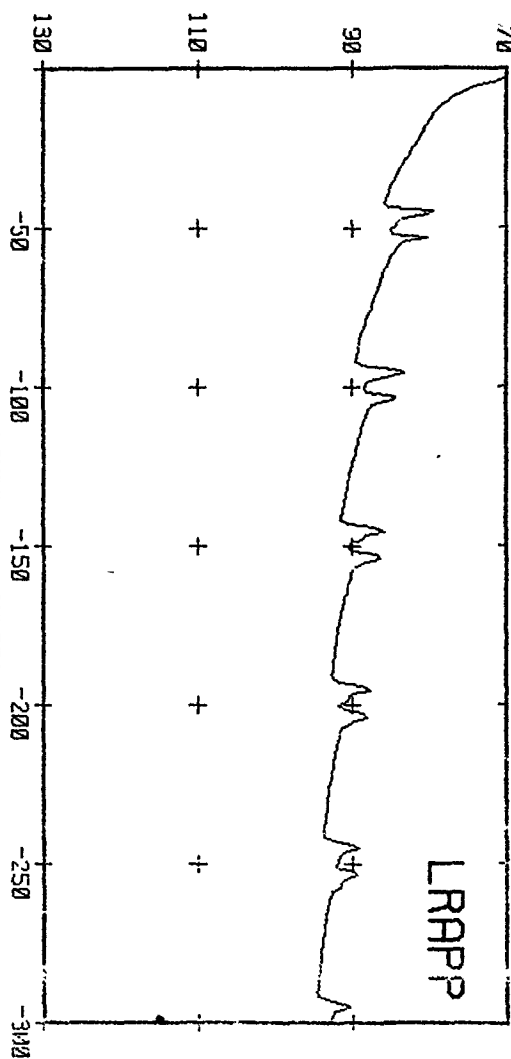


PRER AR HINTER

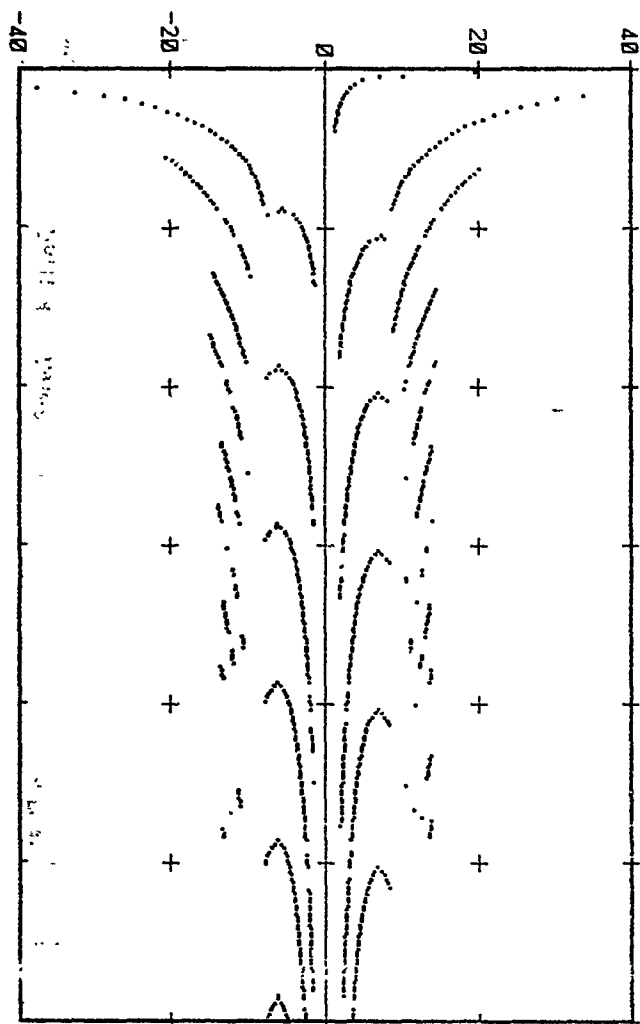
S 200 R 1500 F 150

1450 M/S 1500 1550

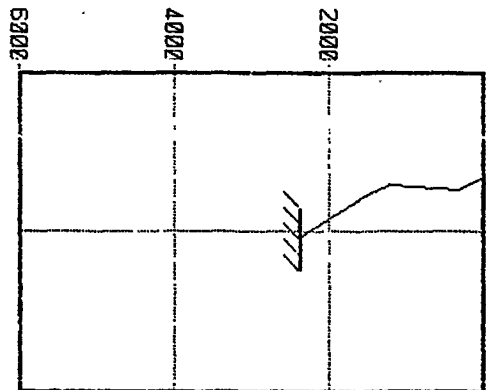
DB LOSS



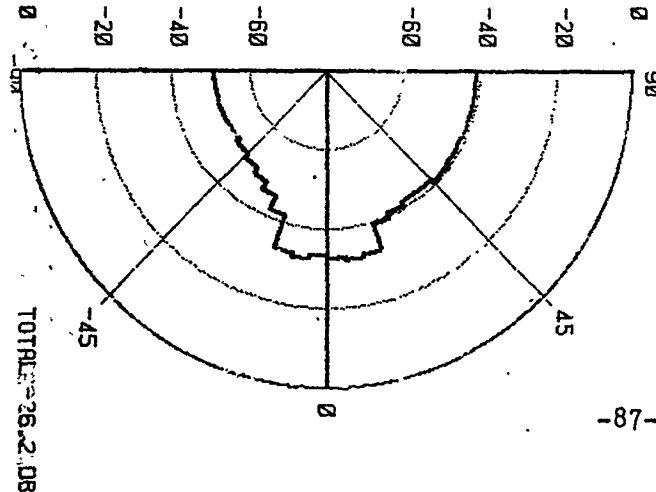
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

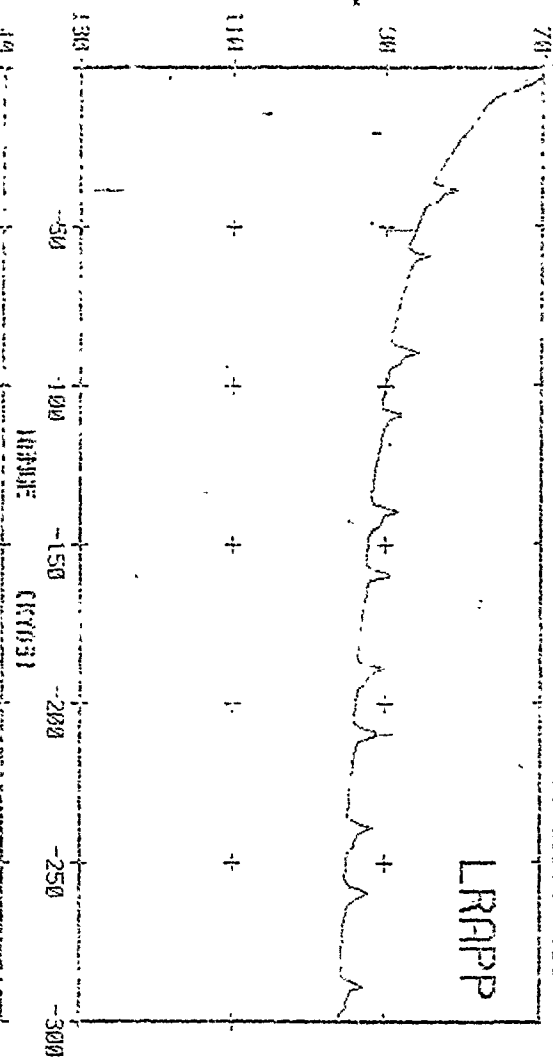


GREEN AN MONITOR

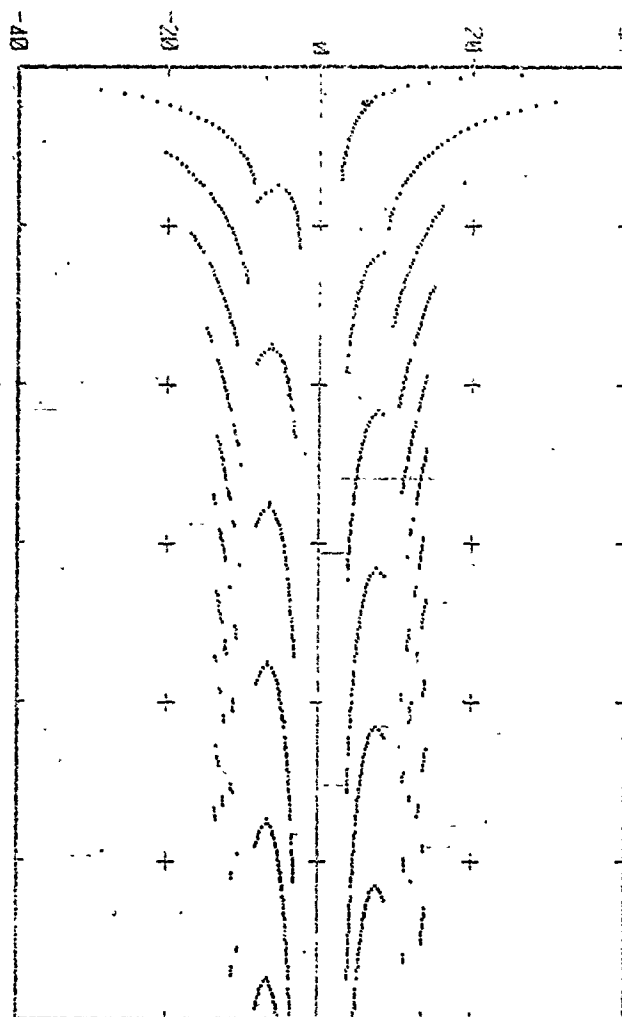
S 20 R 3029 F 150

LRAPP

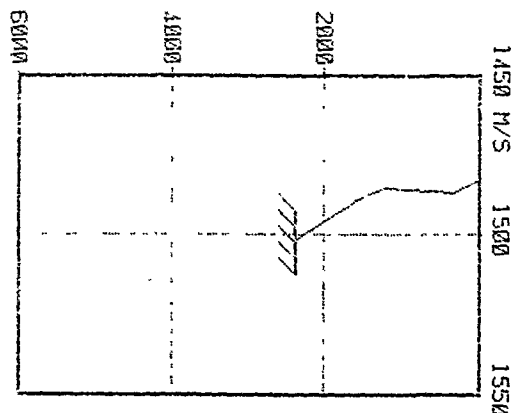
DB LOSS



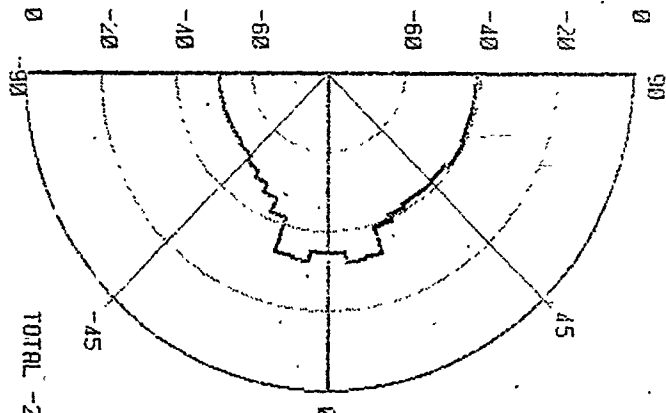
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTRL -26.6 DB

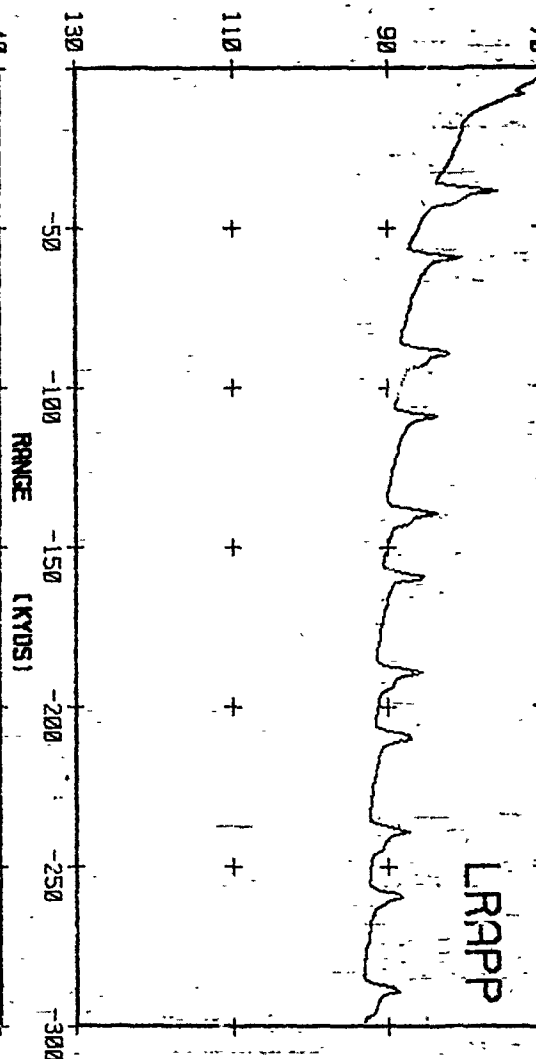
70

AREA 4R WINTER

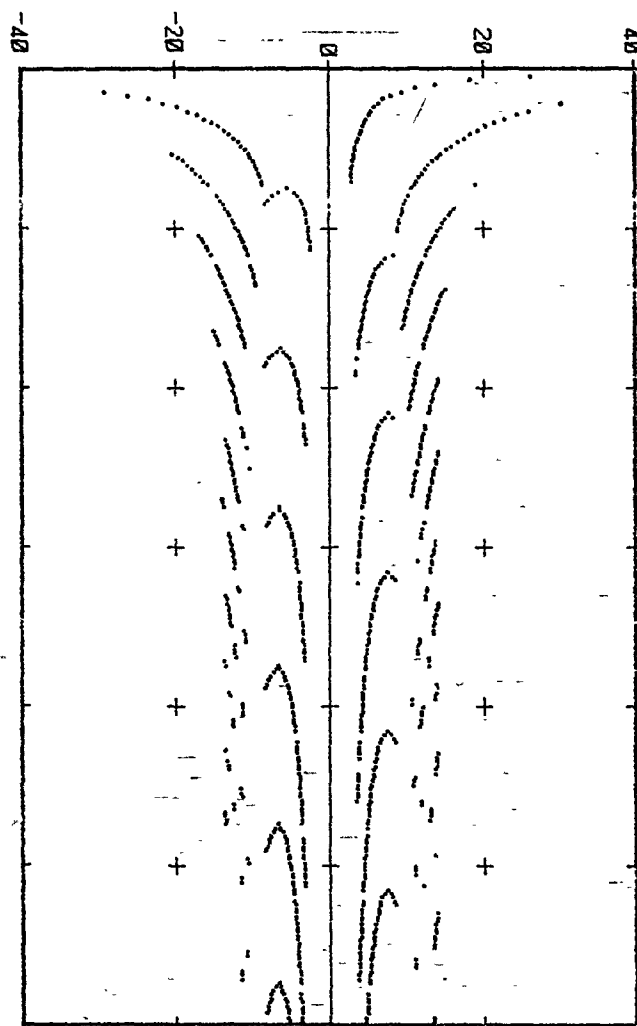
S. 50 N. 3000 F. 150

LRAPP

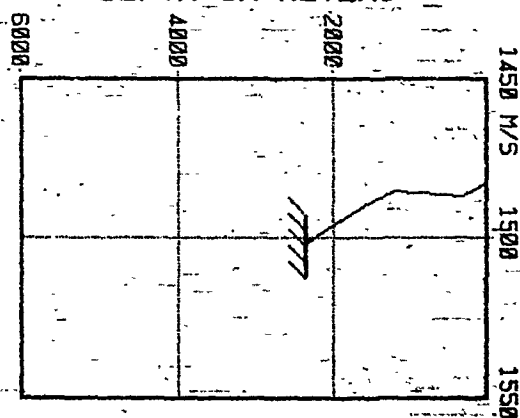
DB LOSS



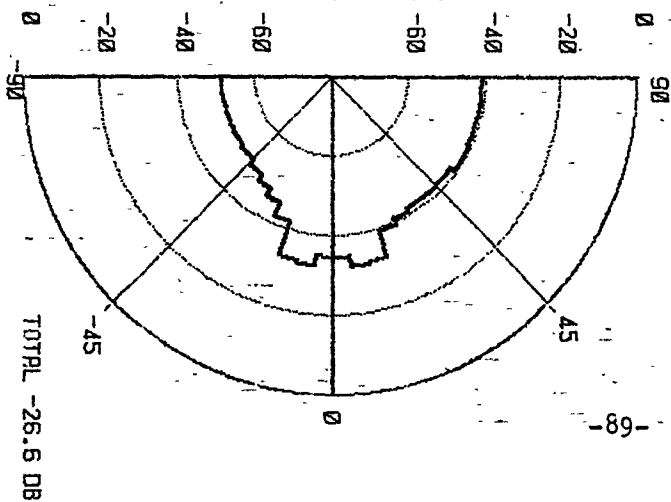
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

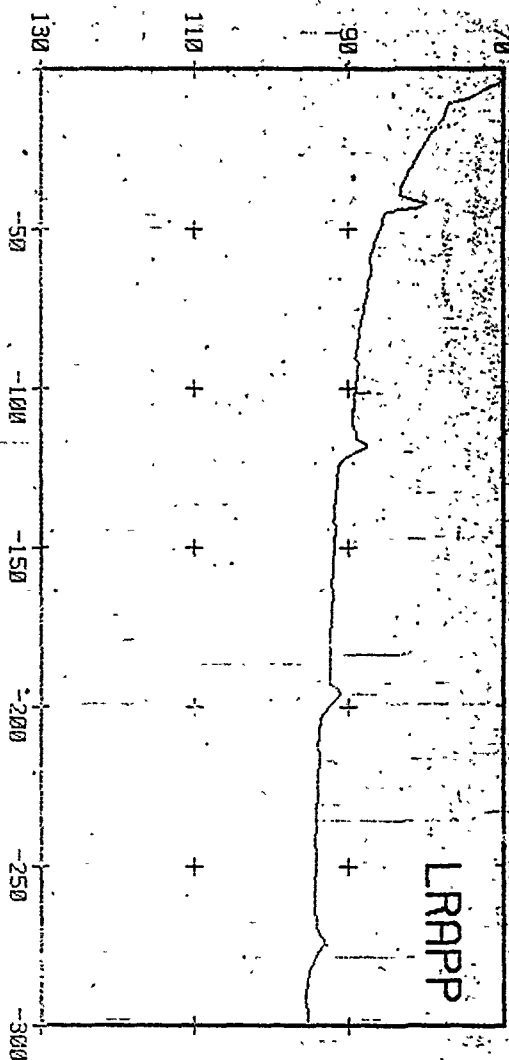


PREP. 40 WINTER

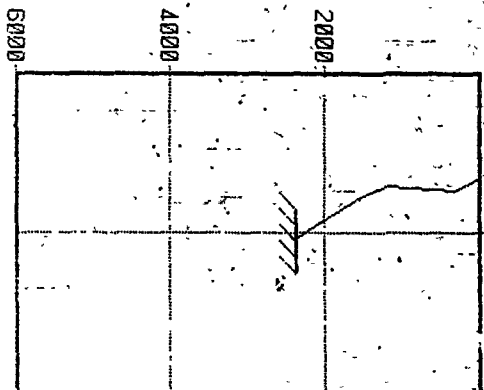
S 20 R 4503 F 150

1450 M/S 1500 1550

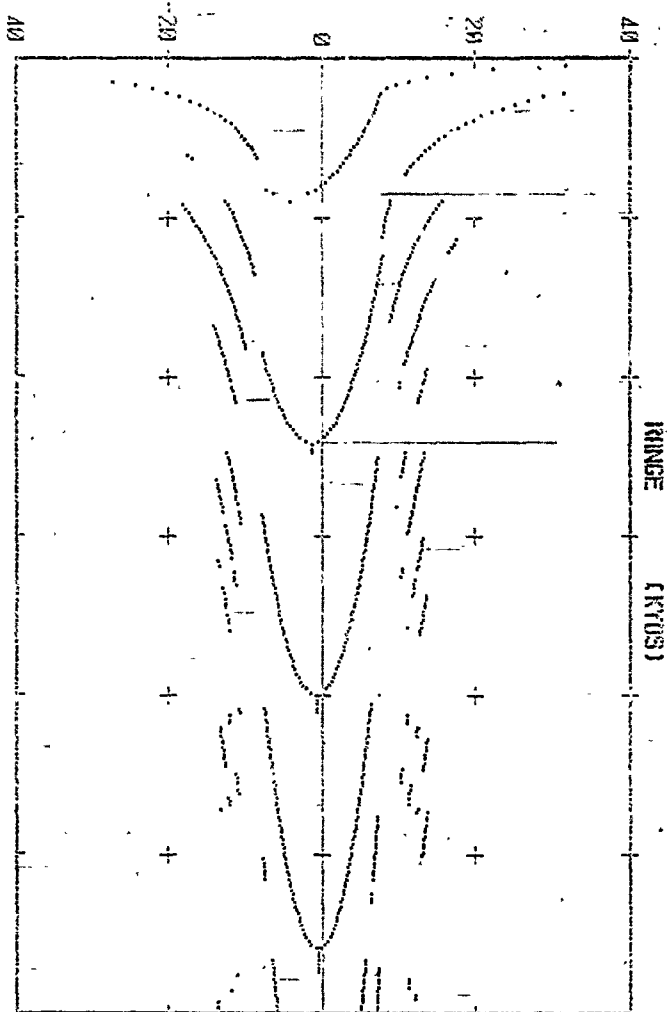
DB LOSS



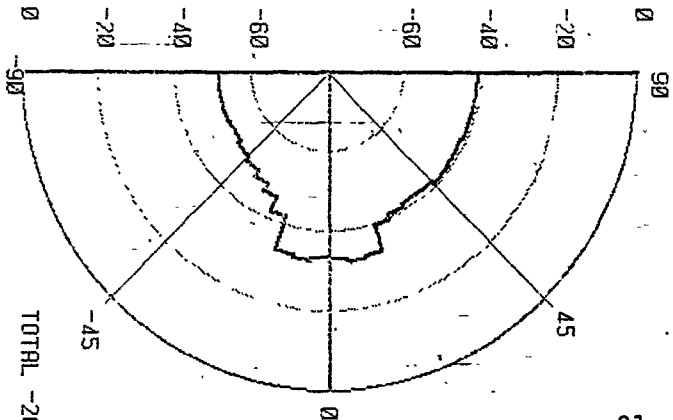
DEPTH IN METERS



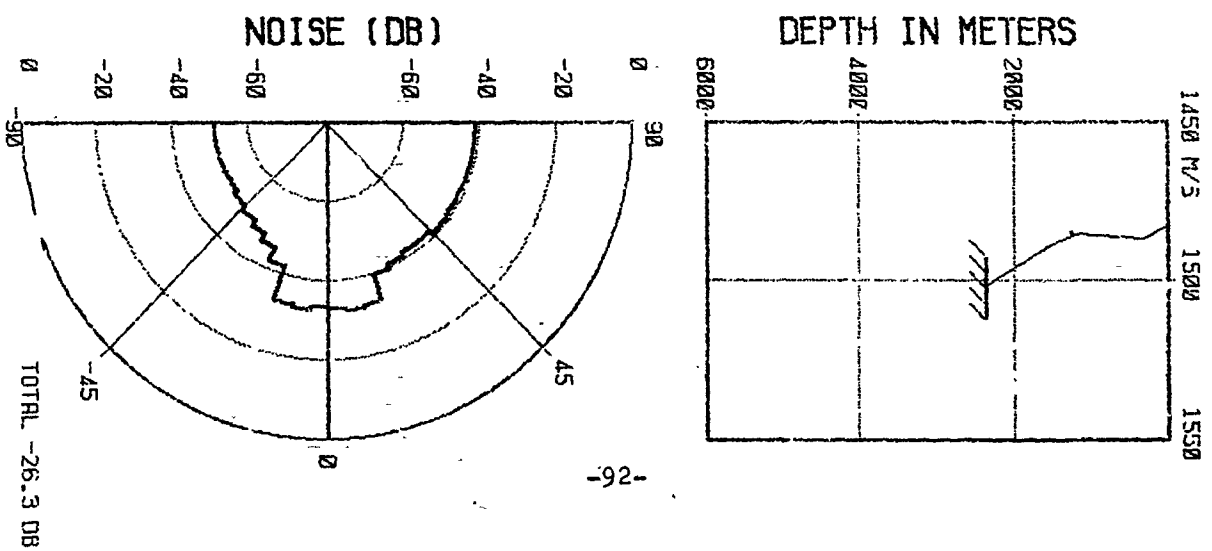
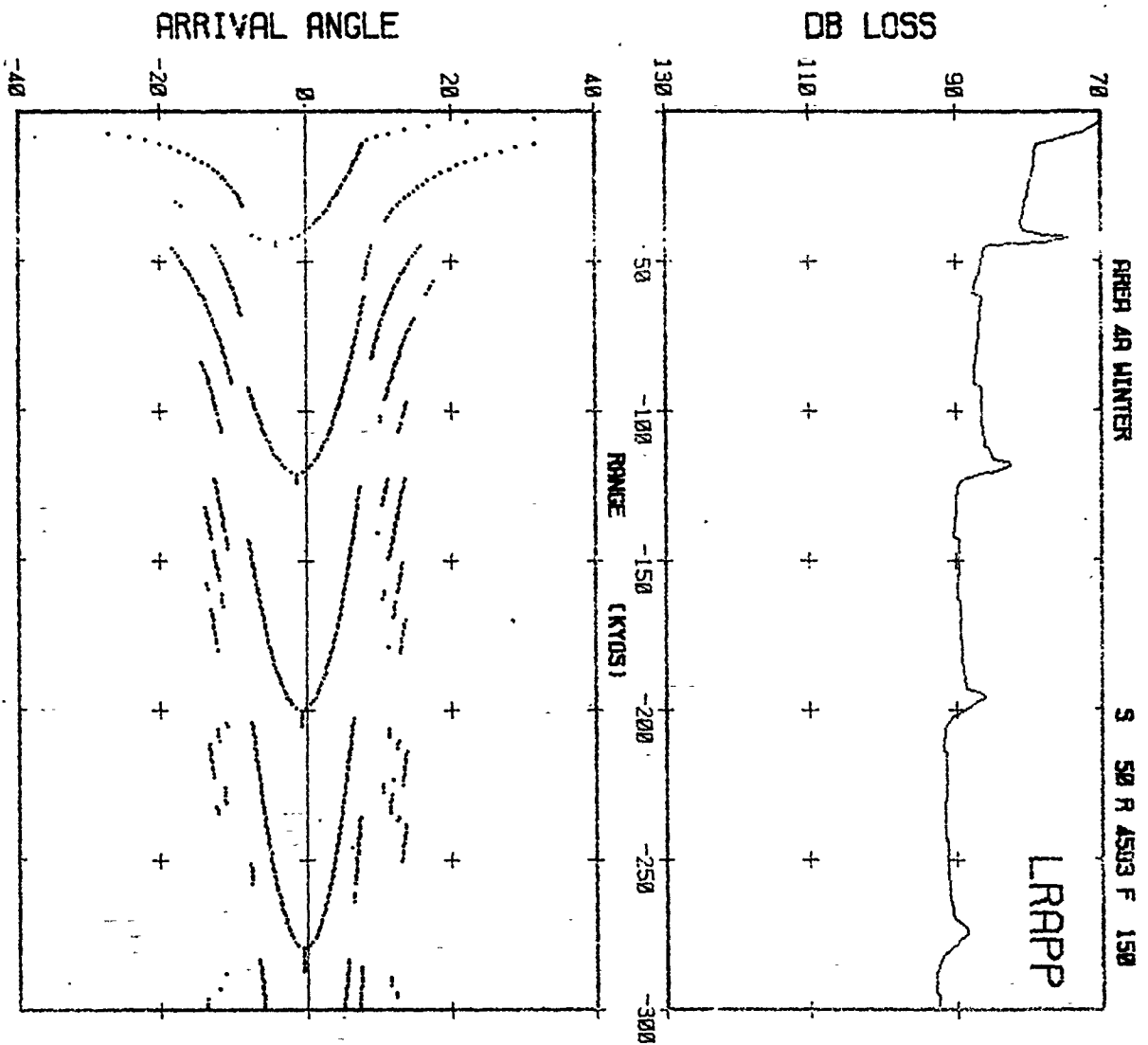
ARRIVAL ANGLE

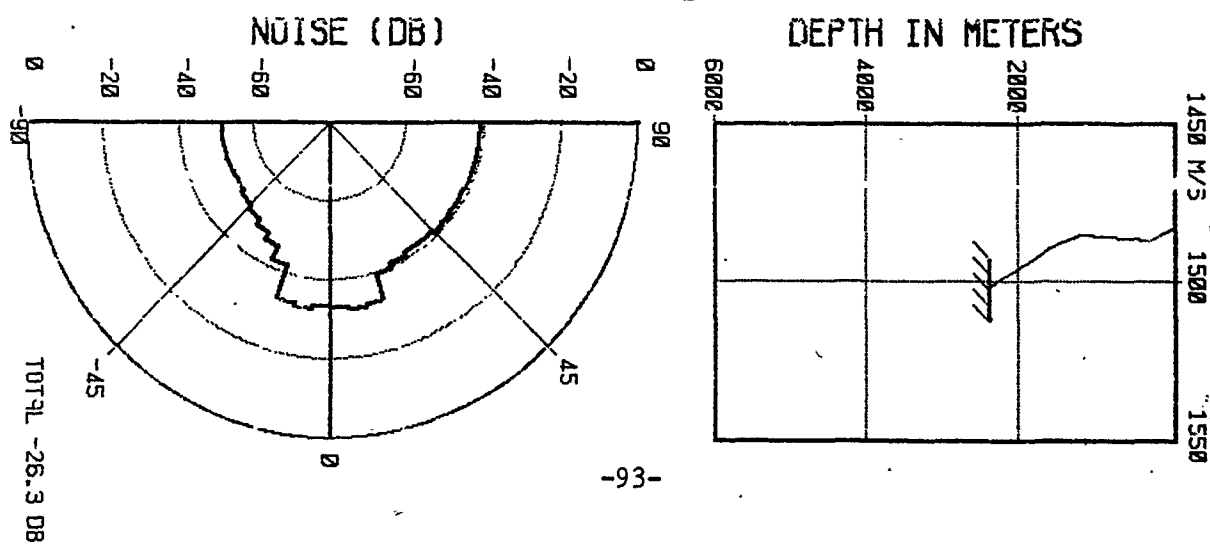
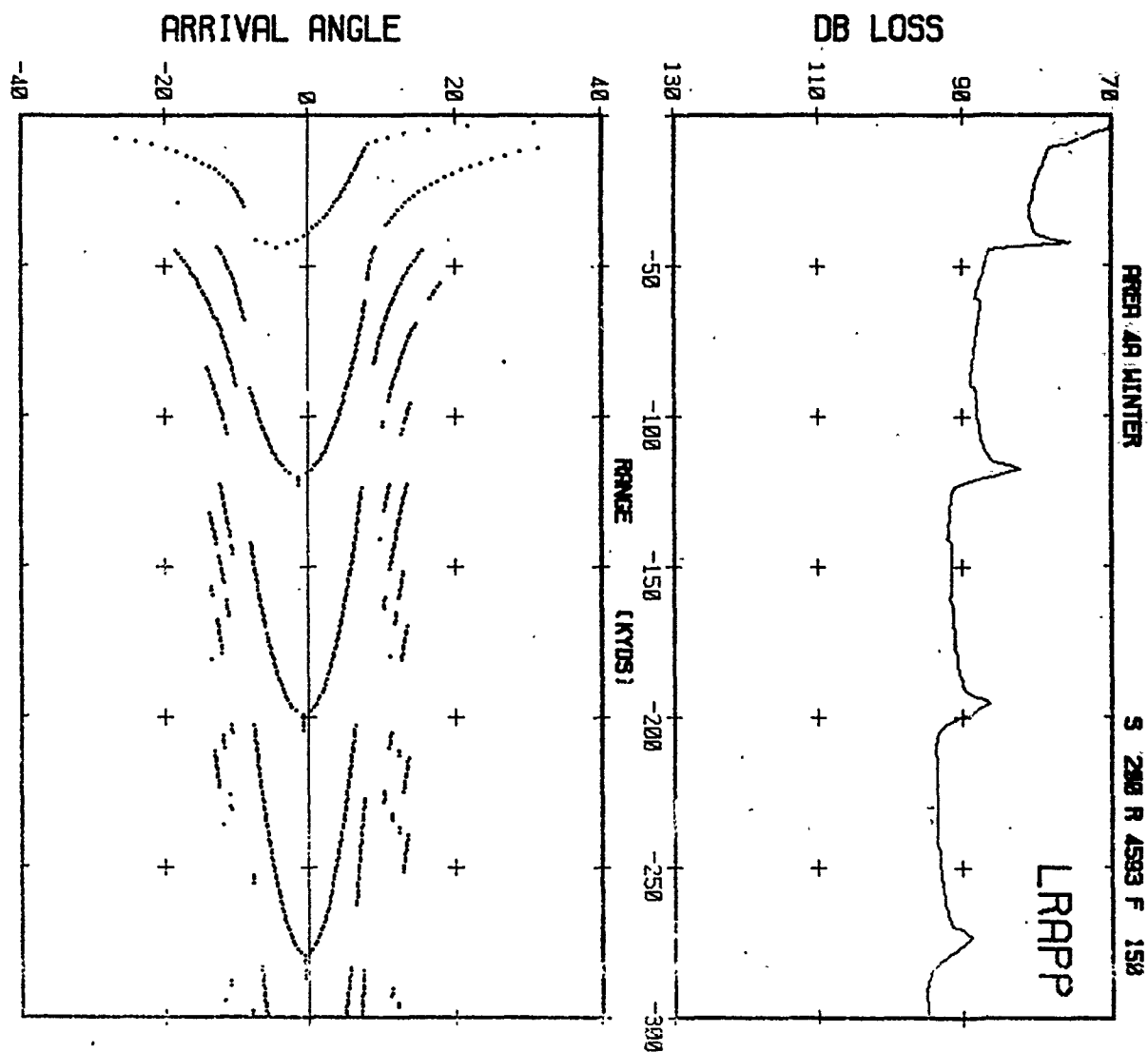


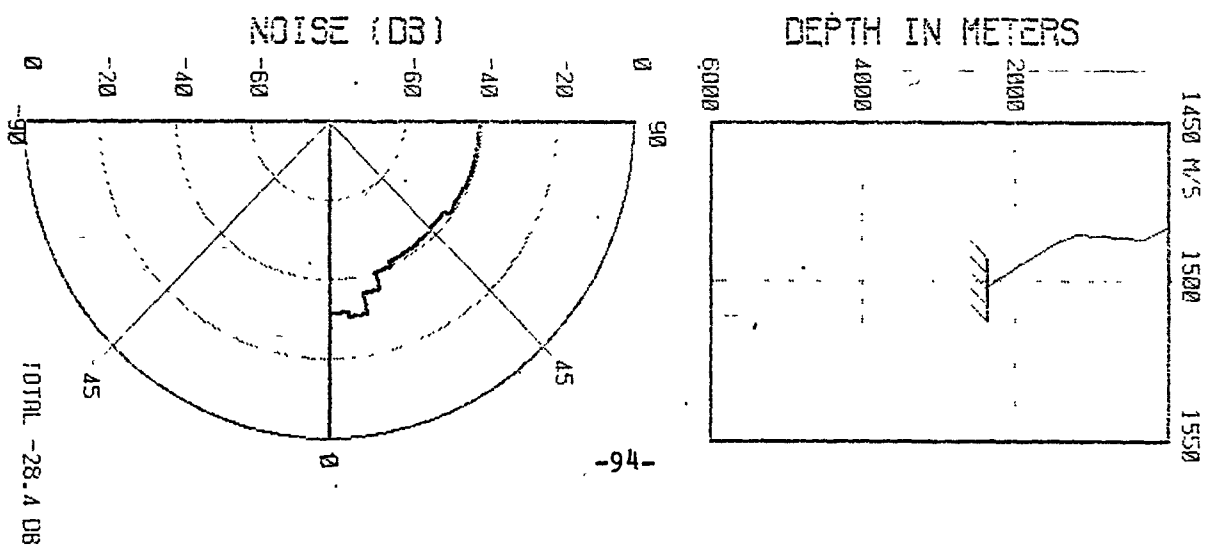
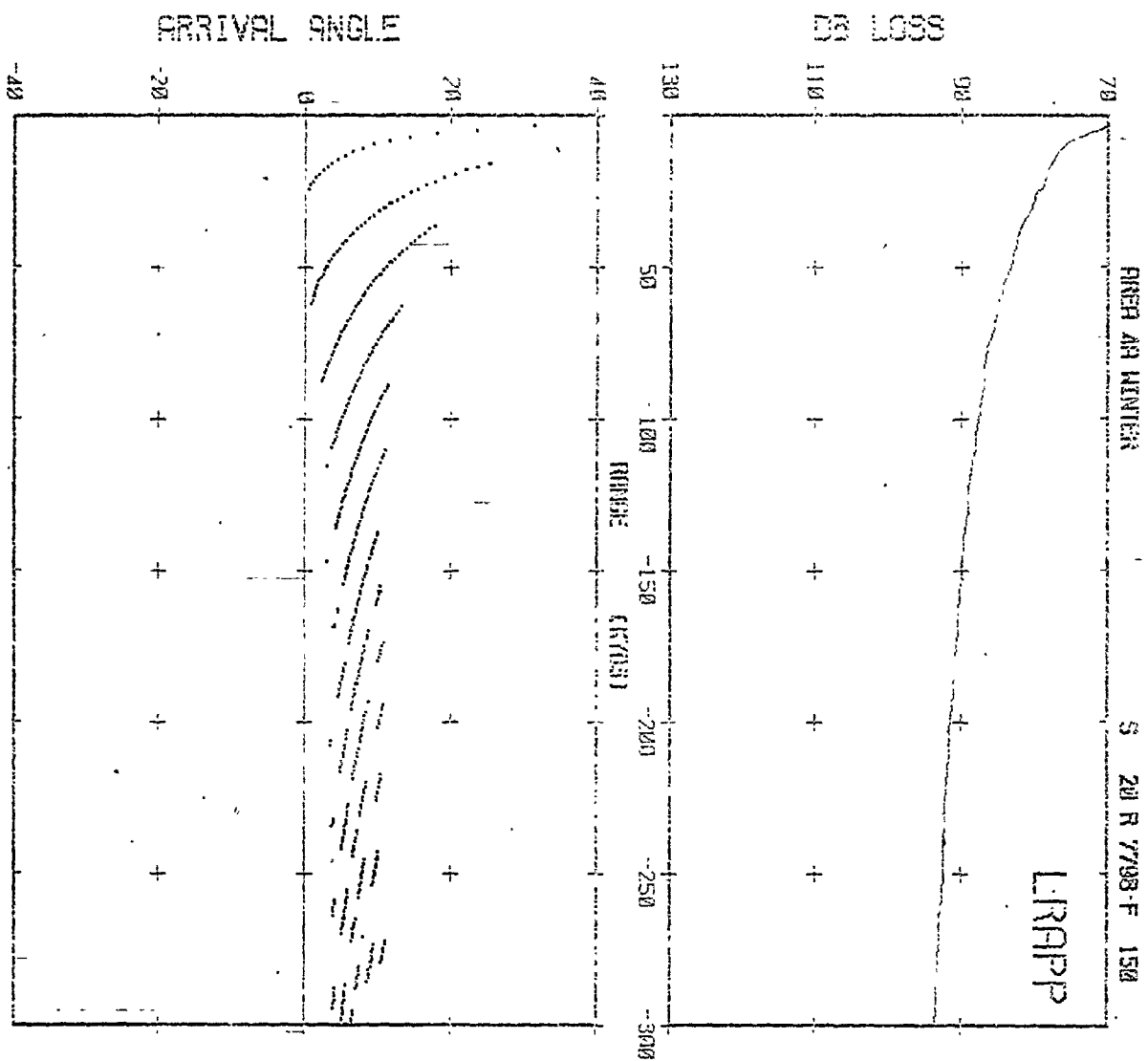
NOISE (DB)

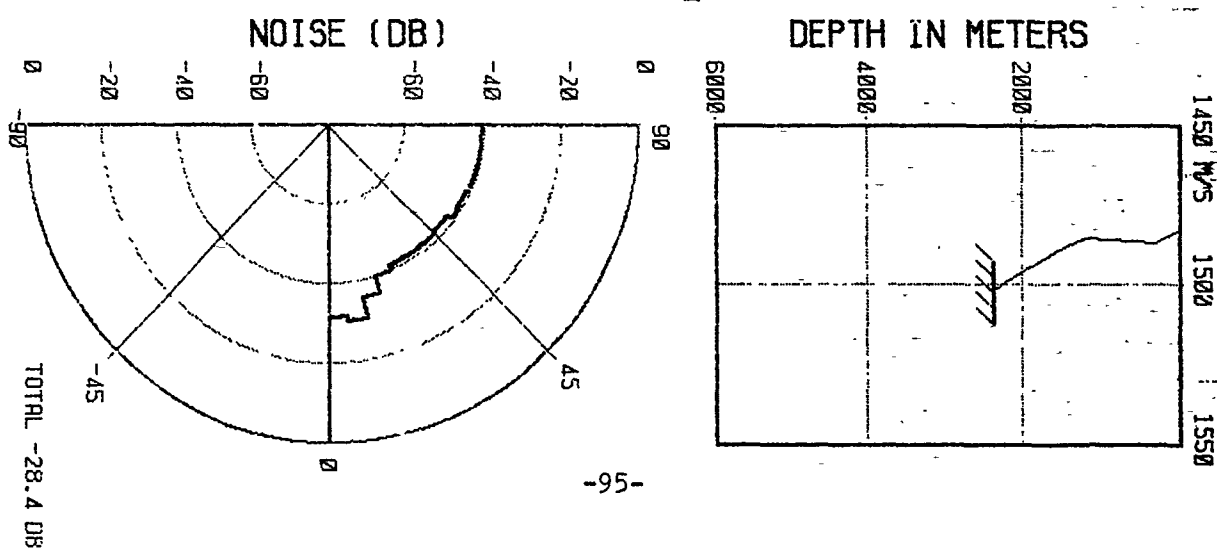
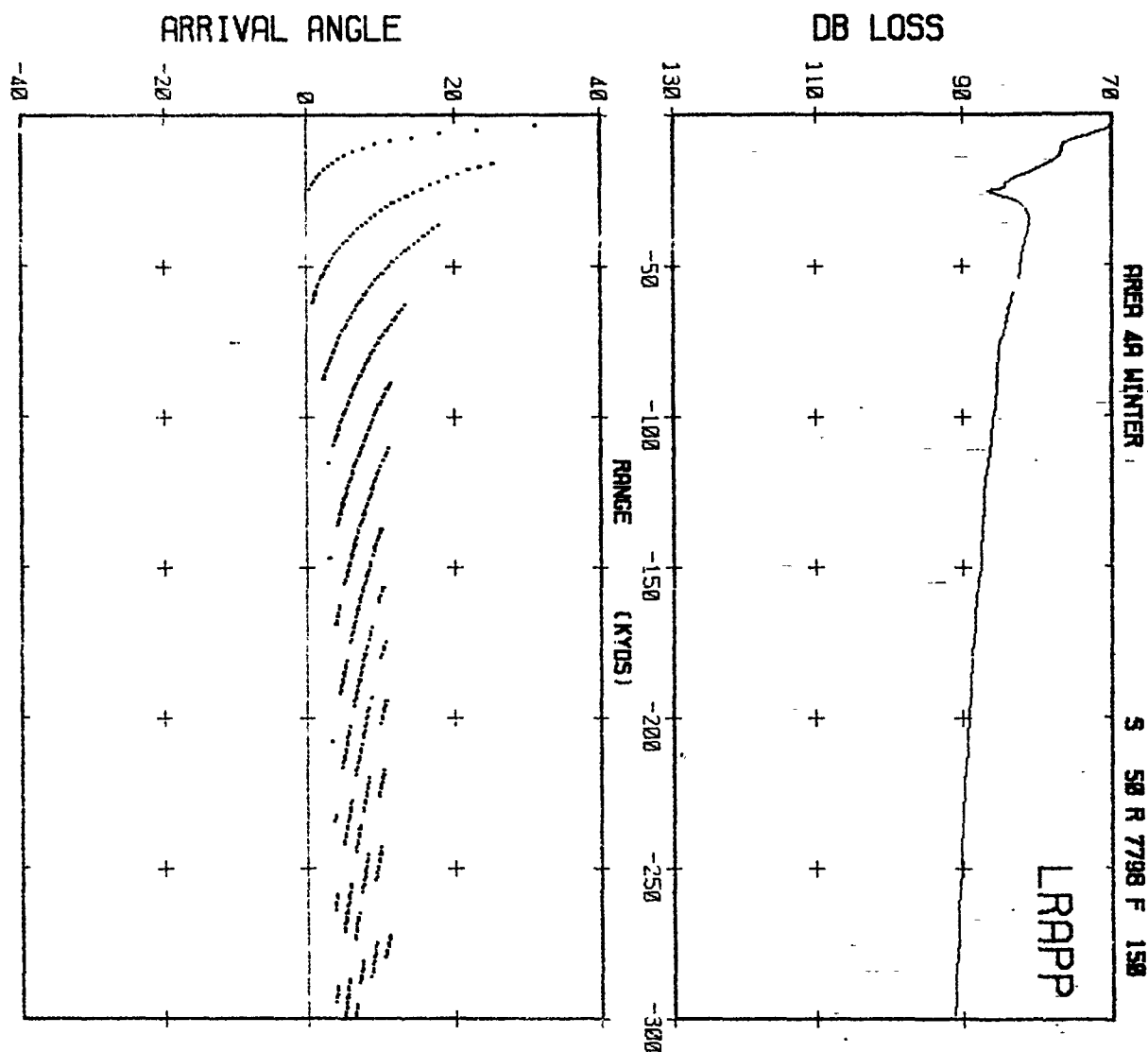


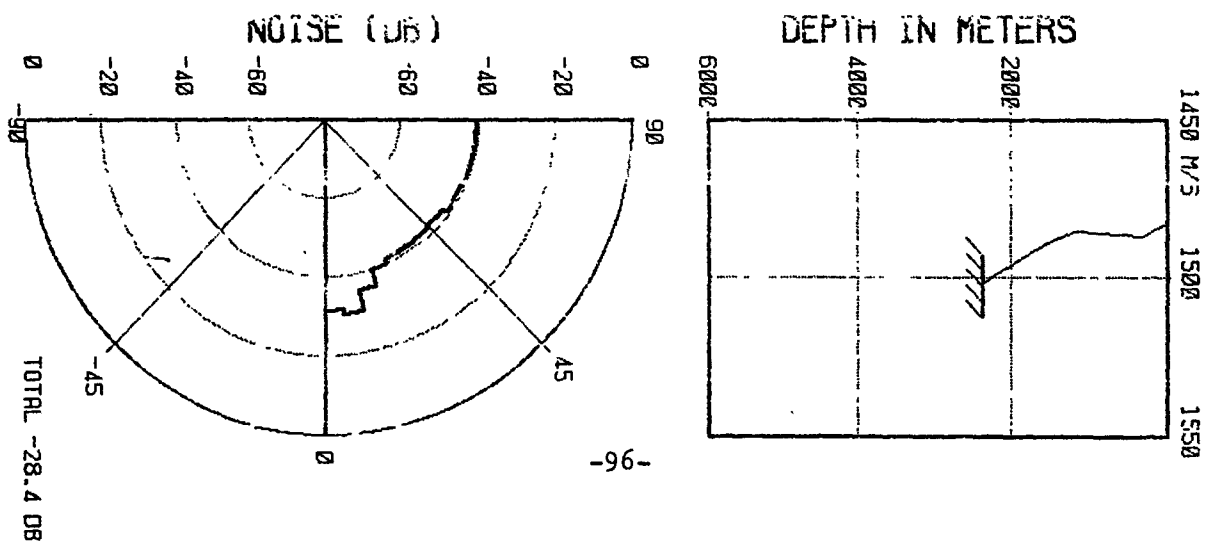
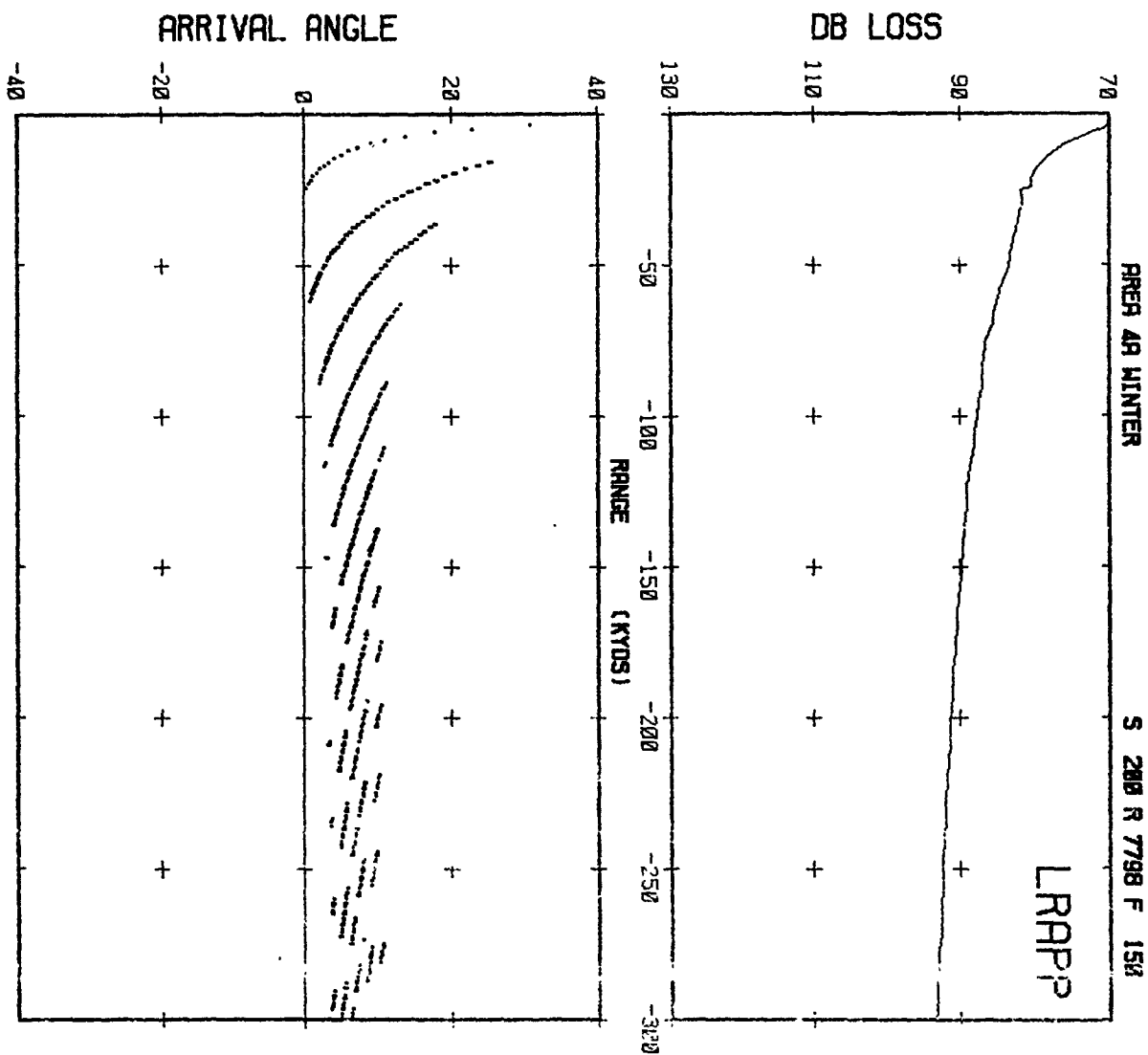
TOTAL -26.3 DB

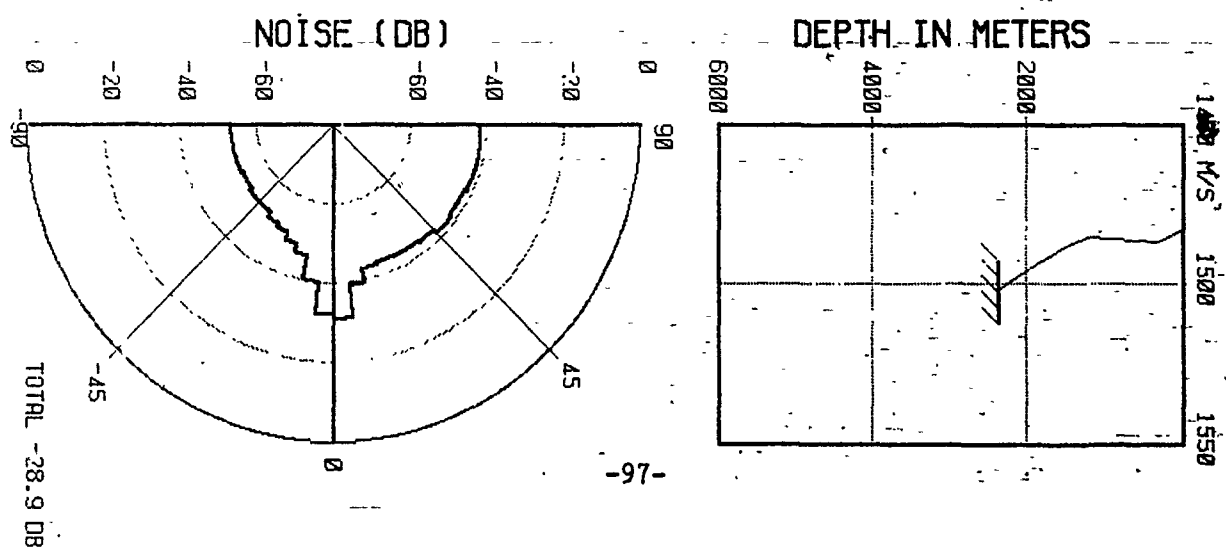
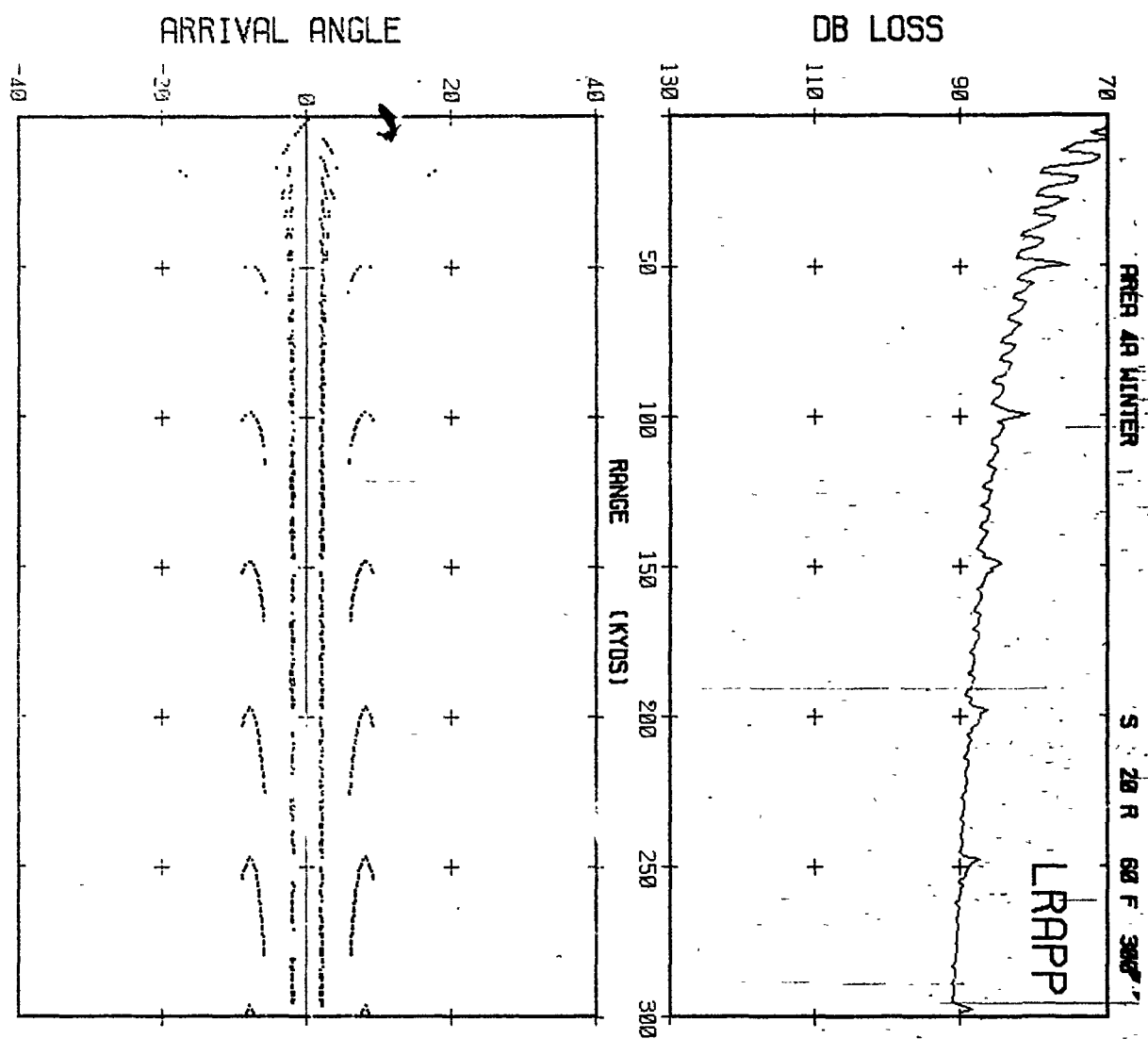


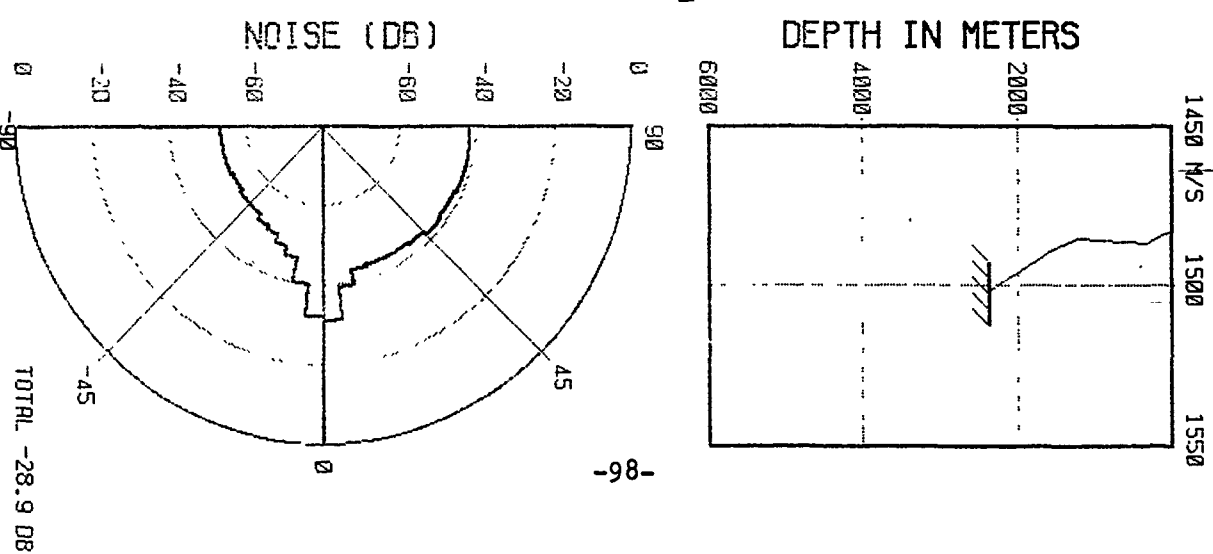
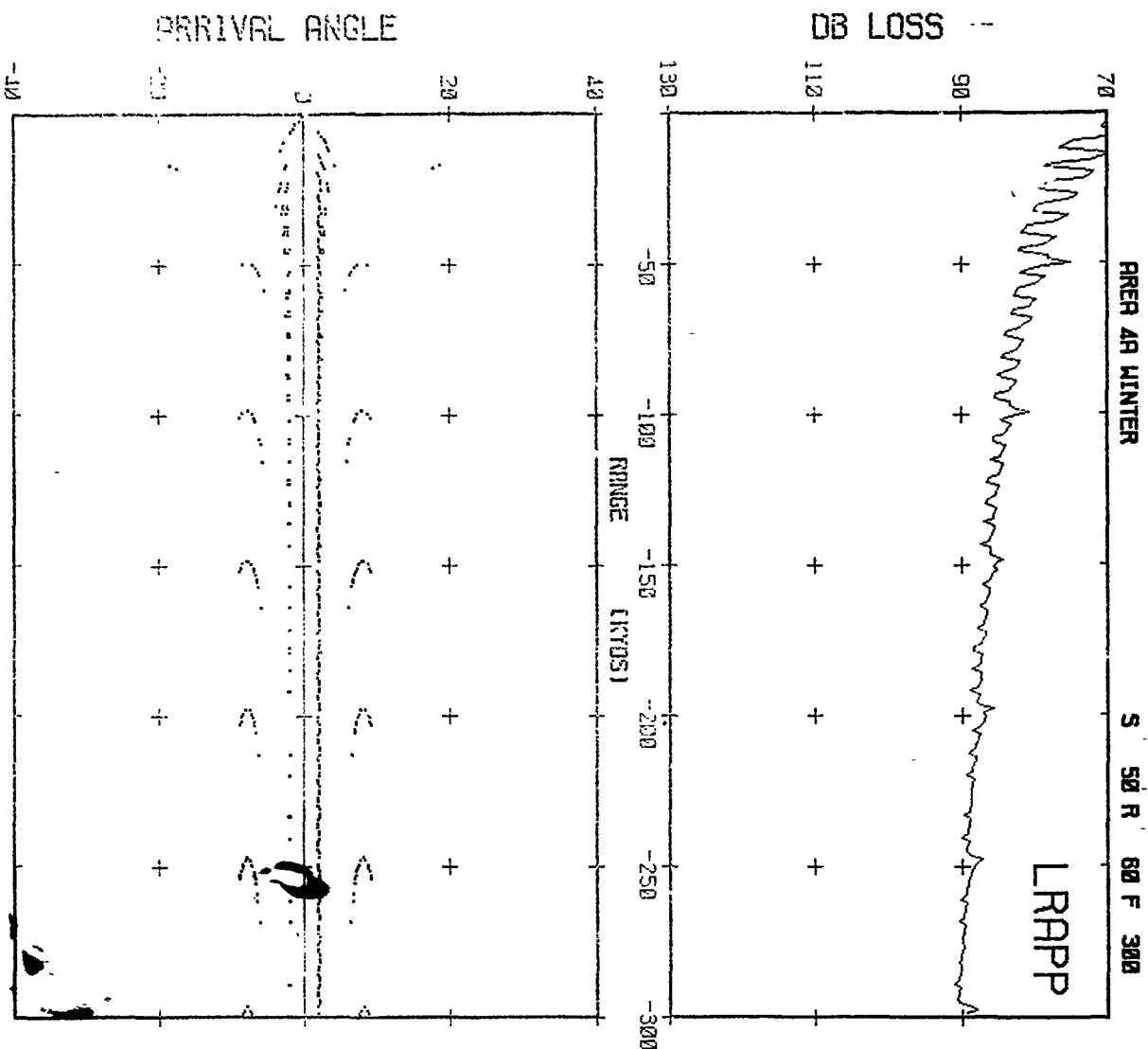


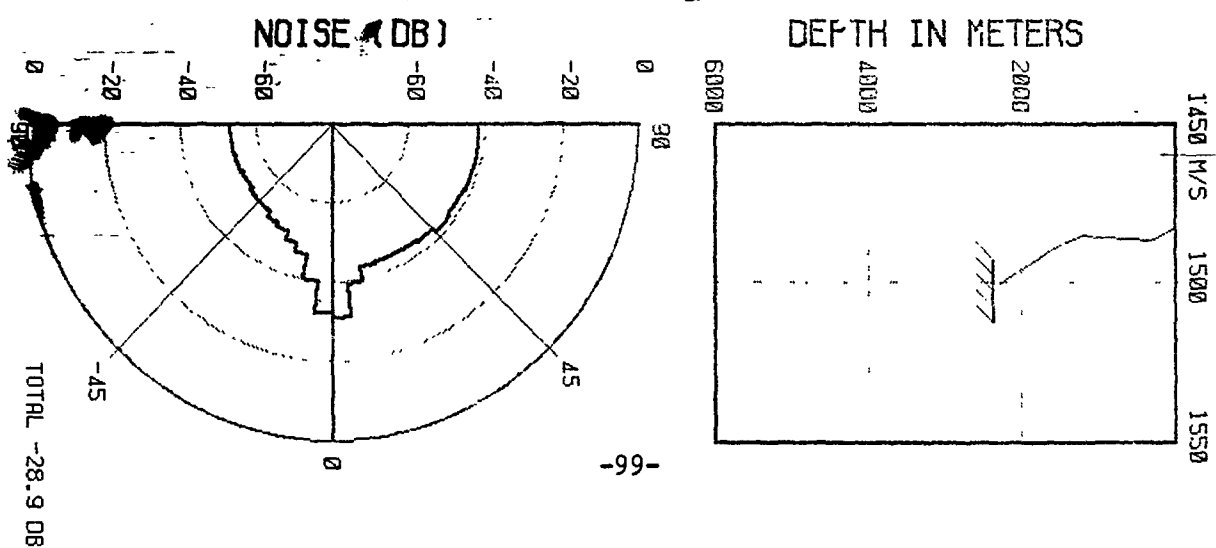
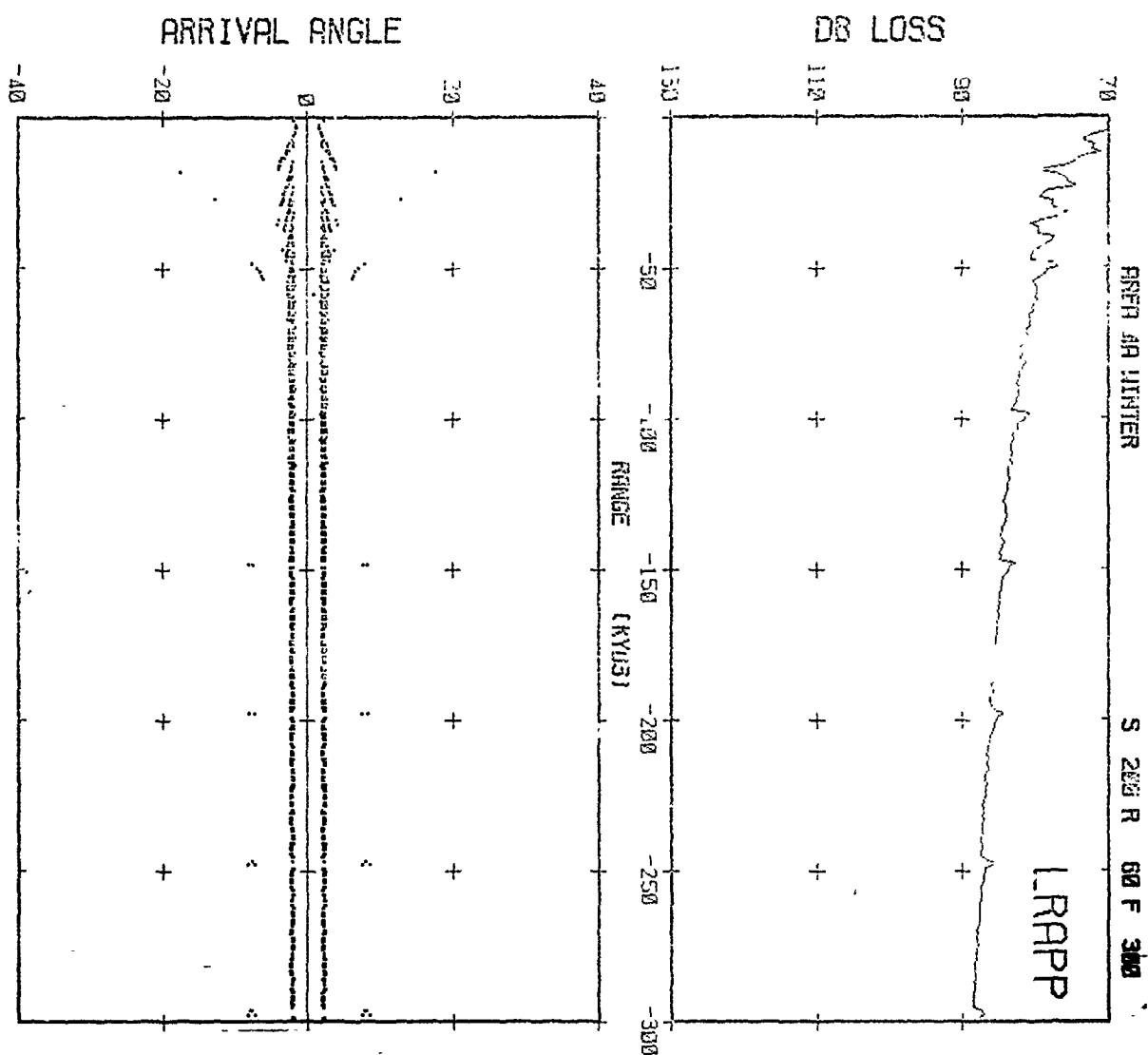


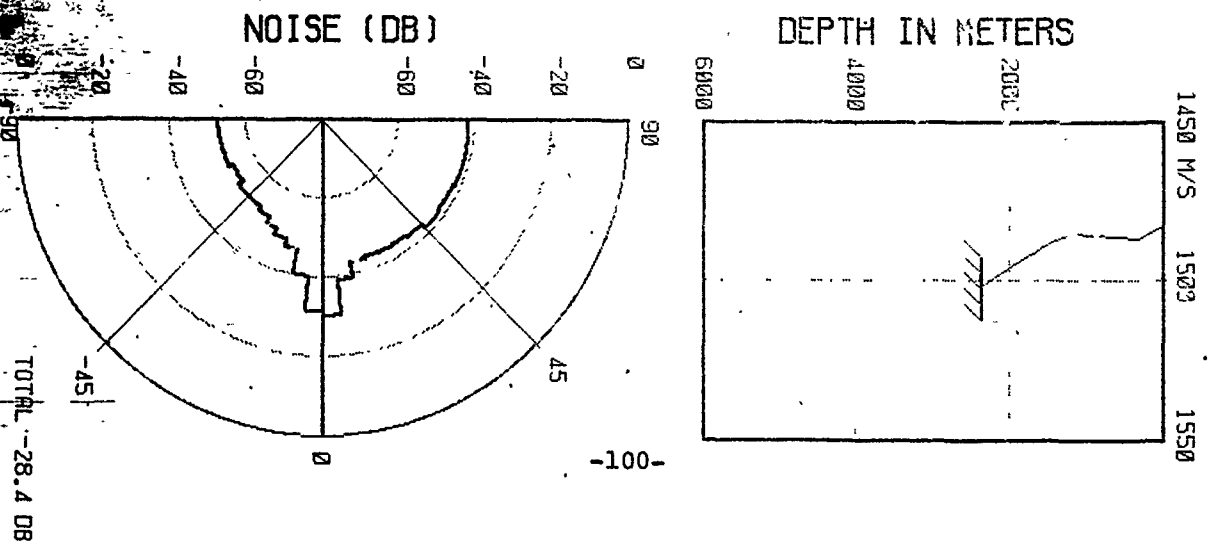
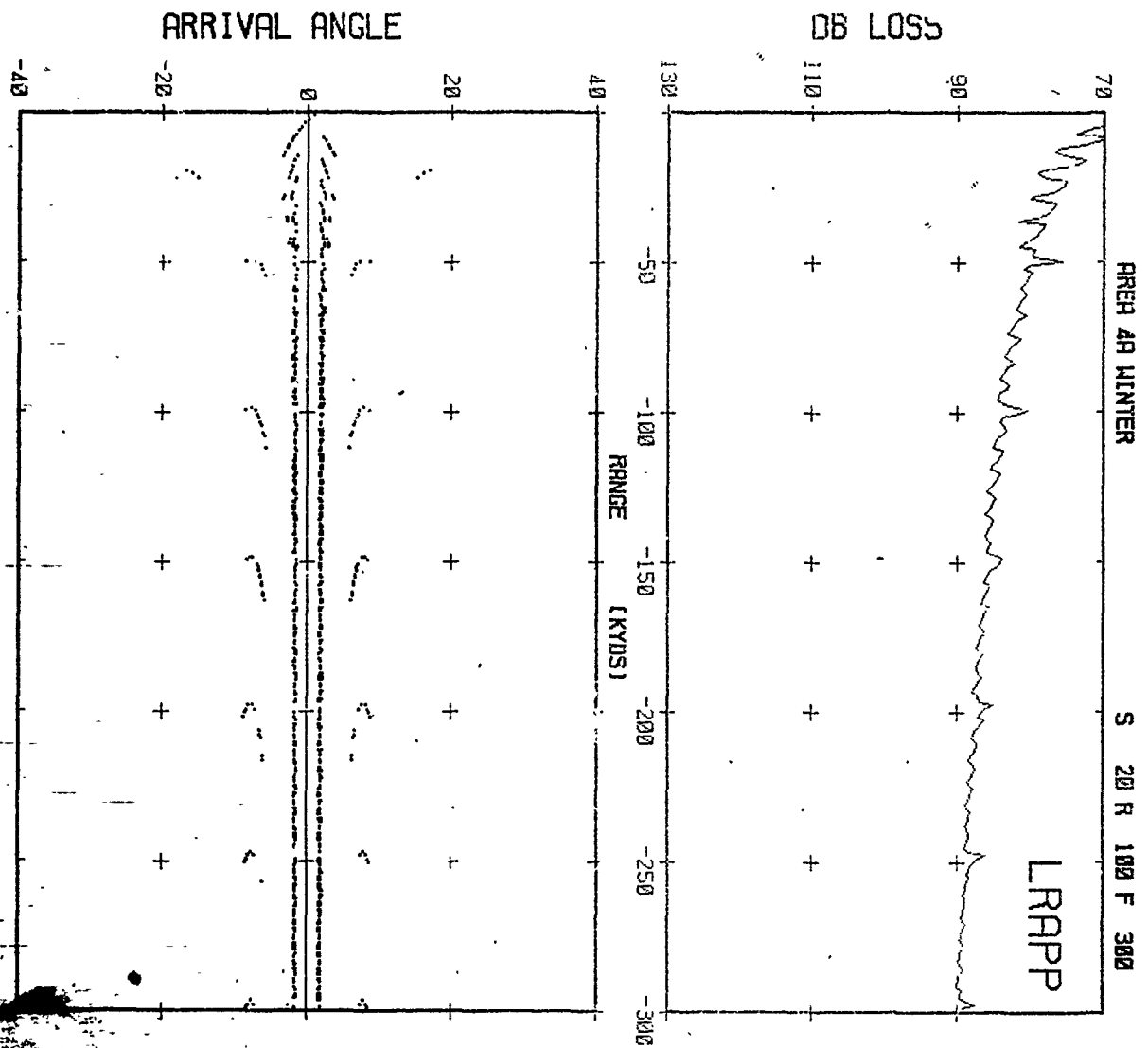










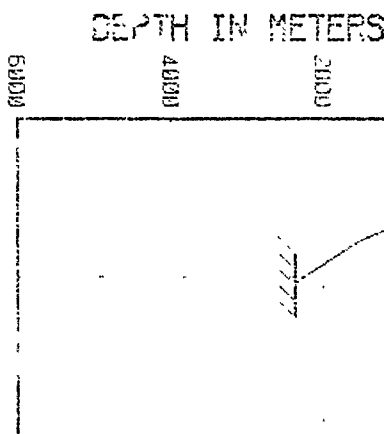
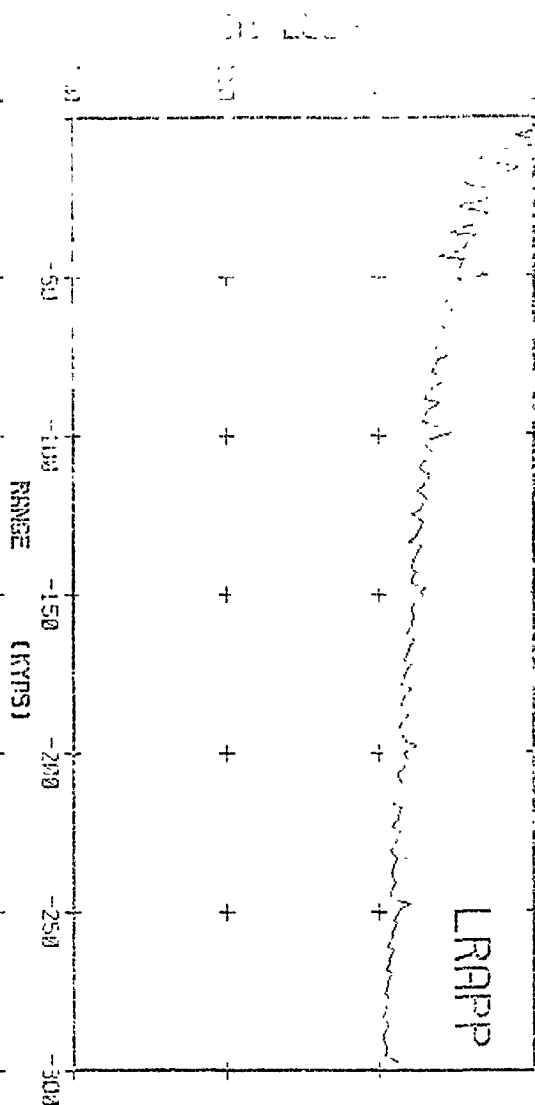


FIRE AR HINTER

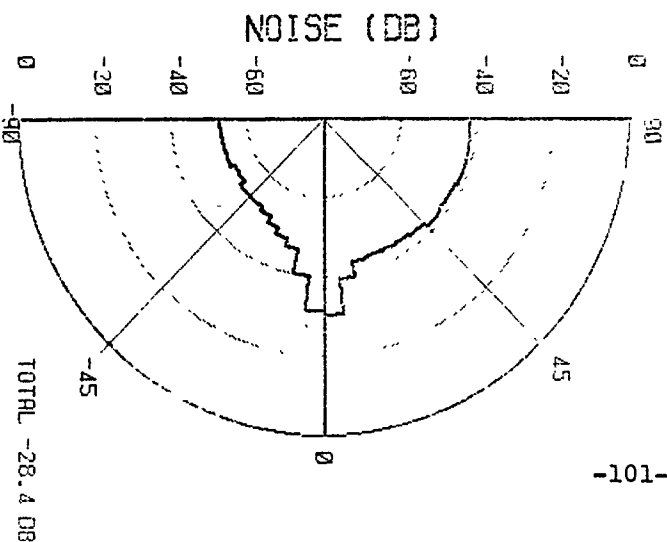
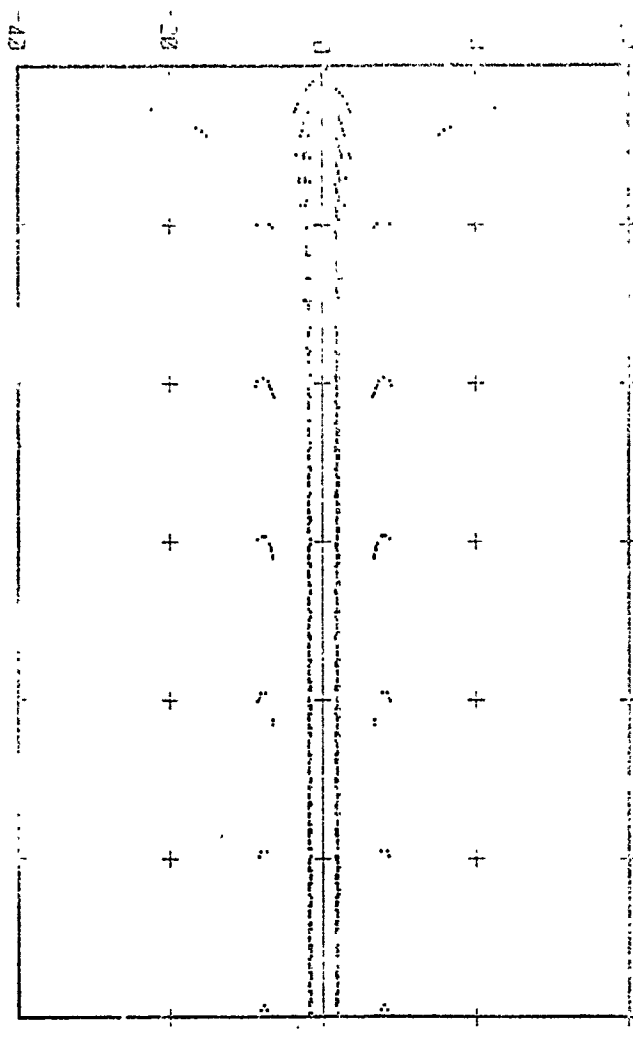
S 53 R 150 F 320

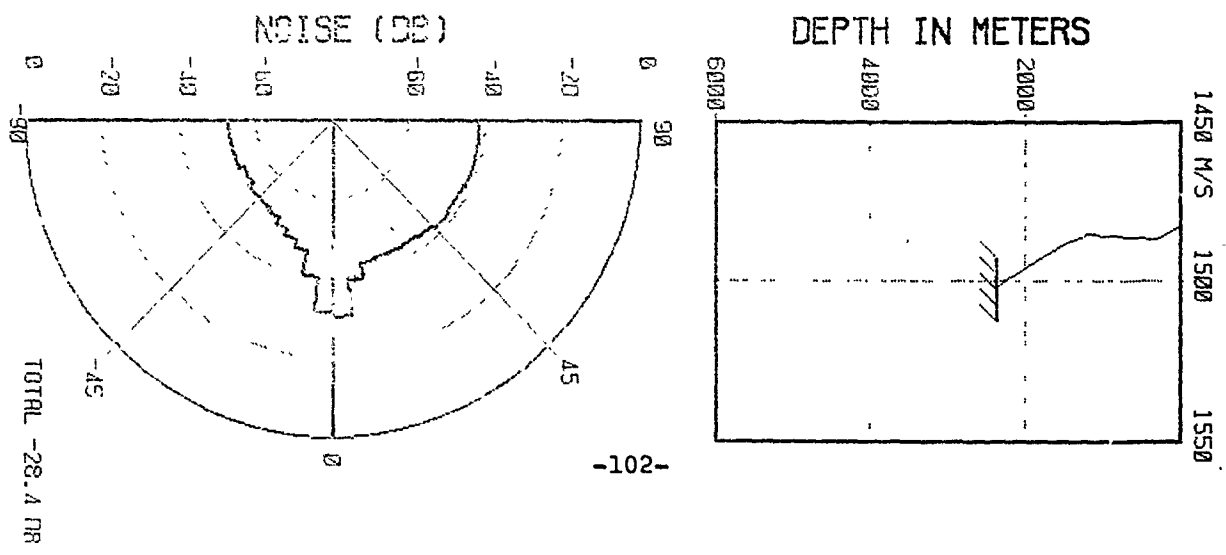
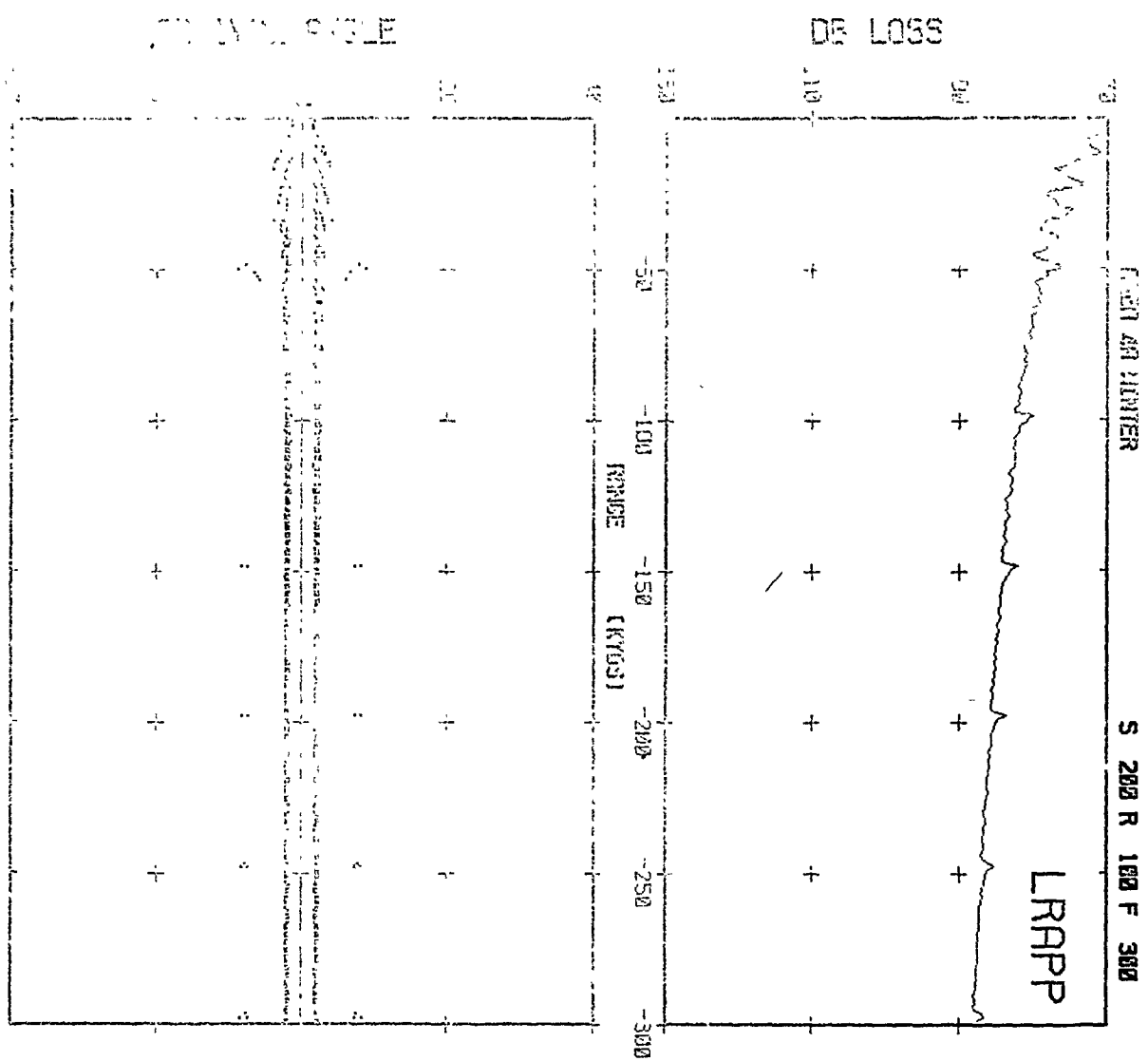
1450 M/S 1502 1550

LRAPP



ARRIVAL ANGLE



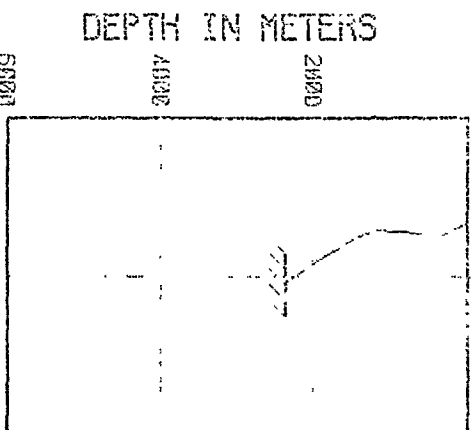
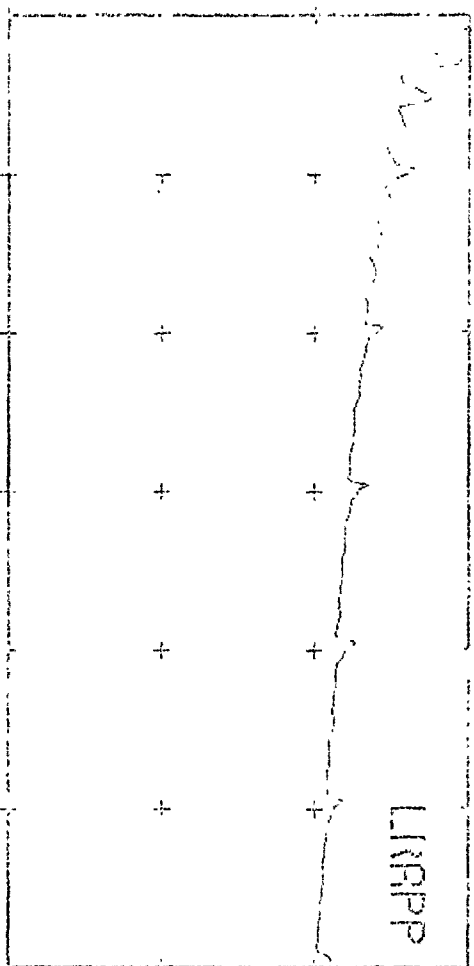


0. 1100

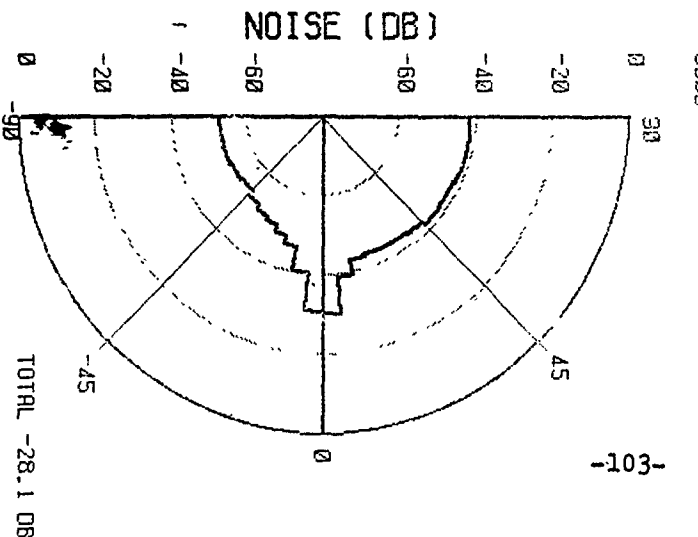
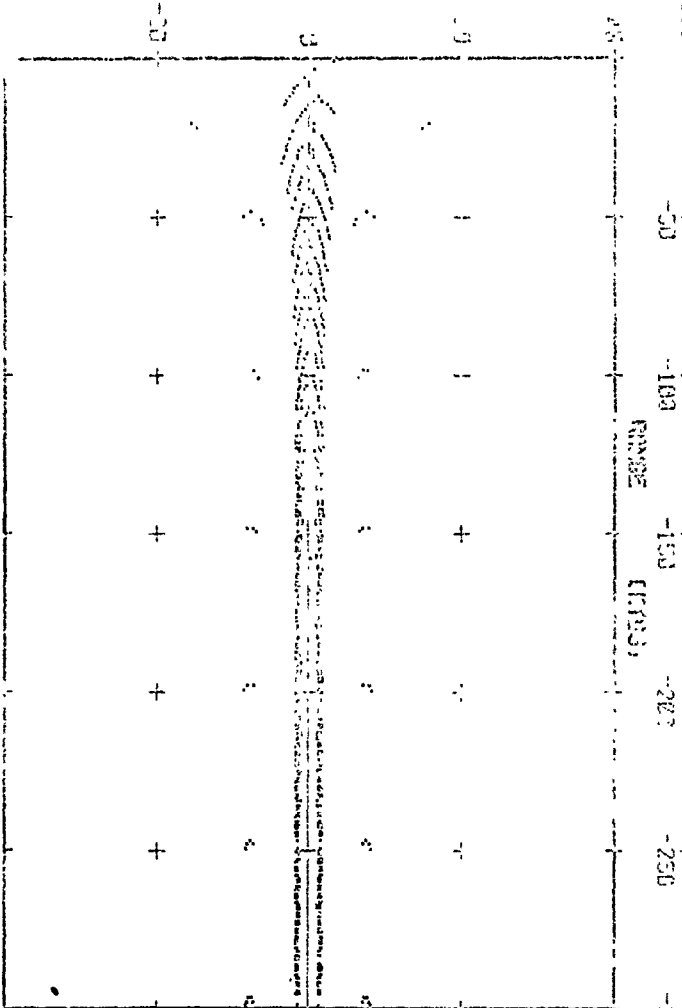
0000 400 HUNTER

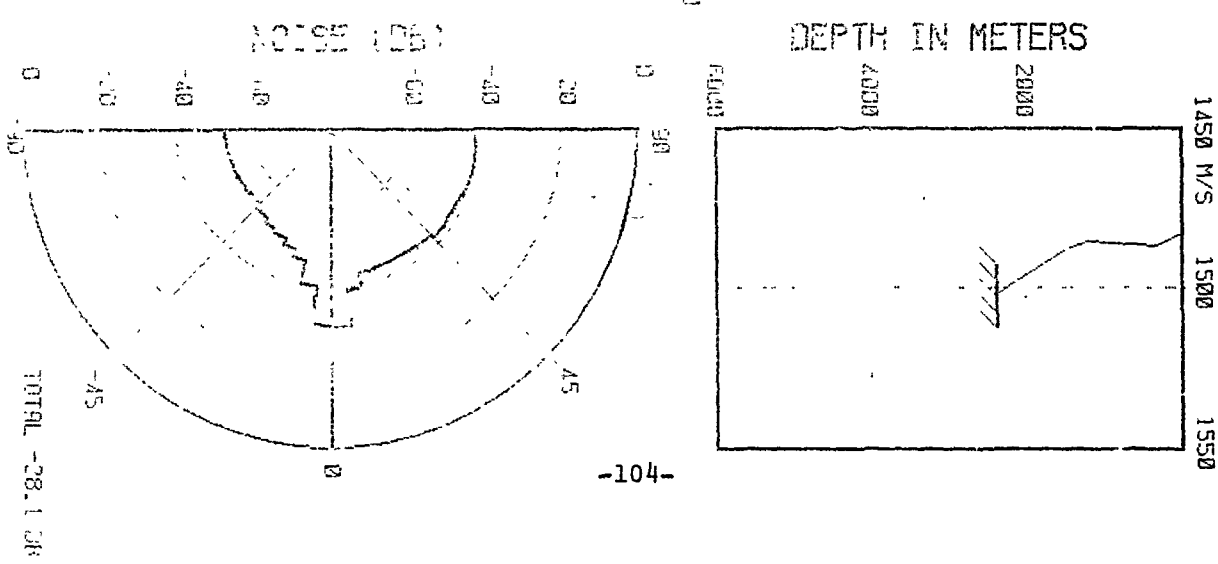
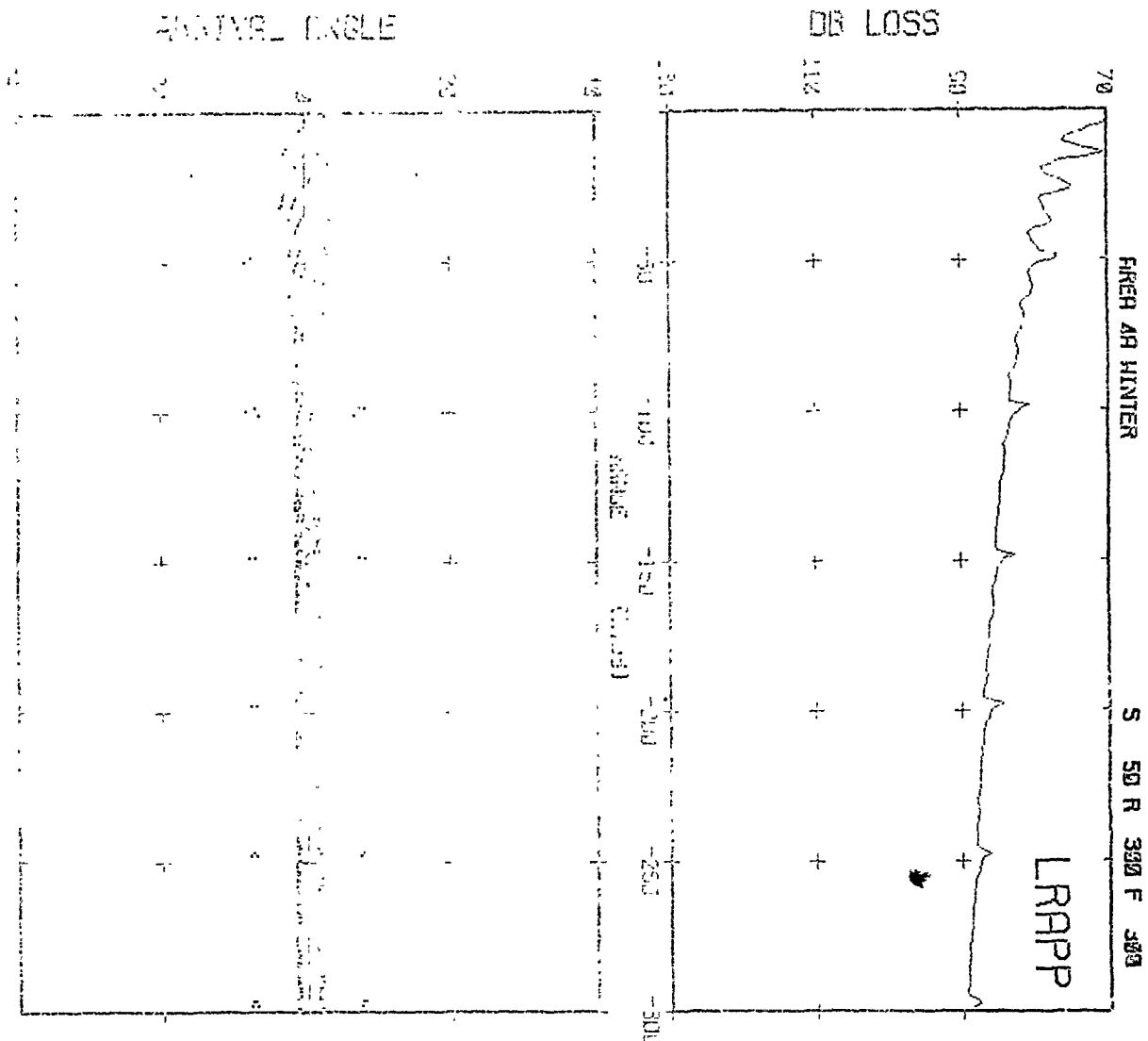
S 20 H 5.4 P 553

1450 W/S 1502 1550



ARRIVAL ANGLE



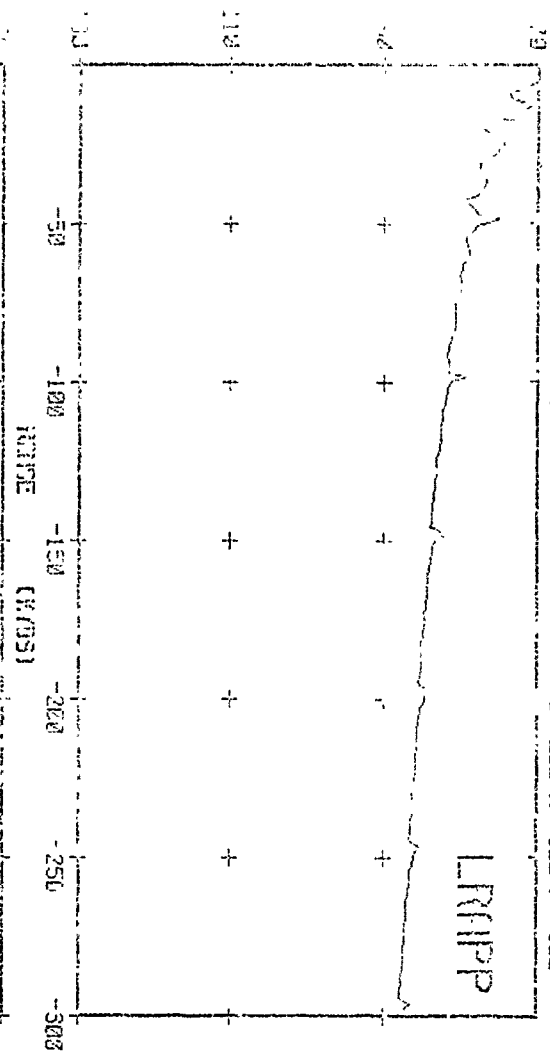


GREEN AIR WINNER

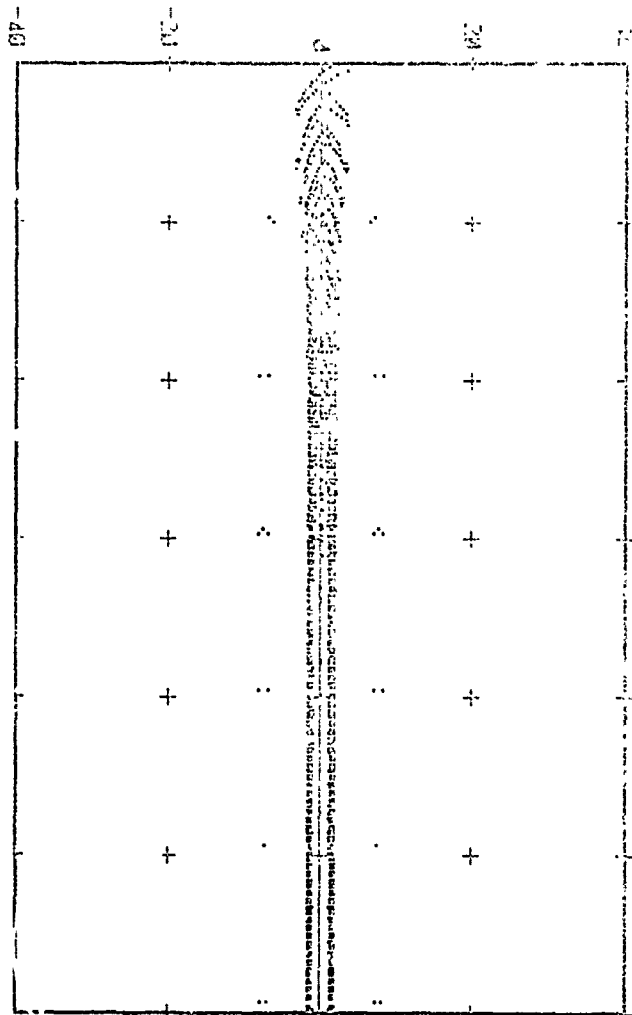
S 333 R SCL F 333

1450 M/S 1500 1550

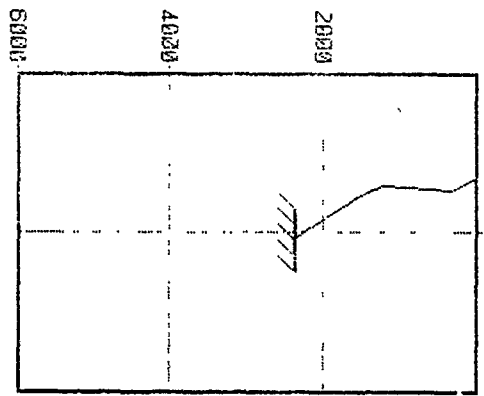
DB LOSS



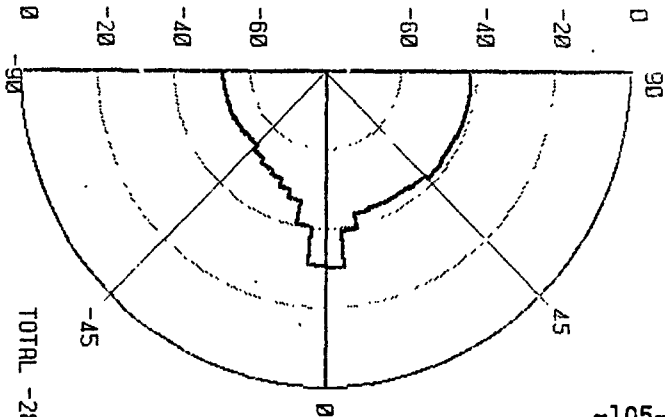
PRELIM RAGLE

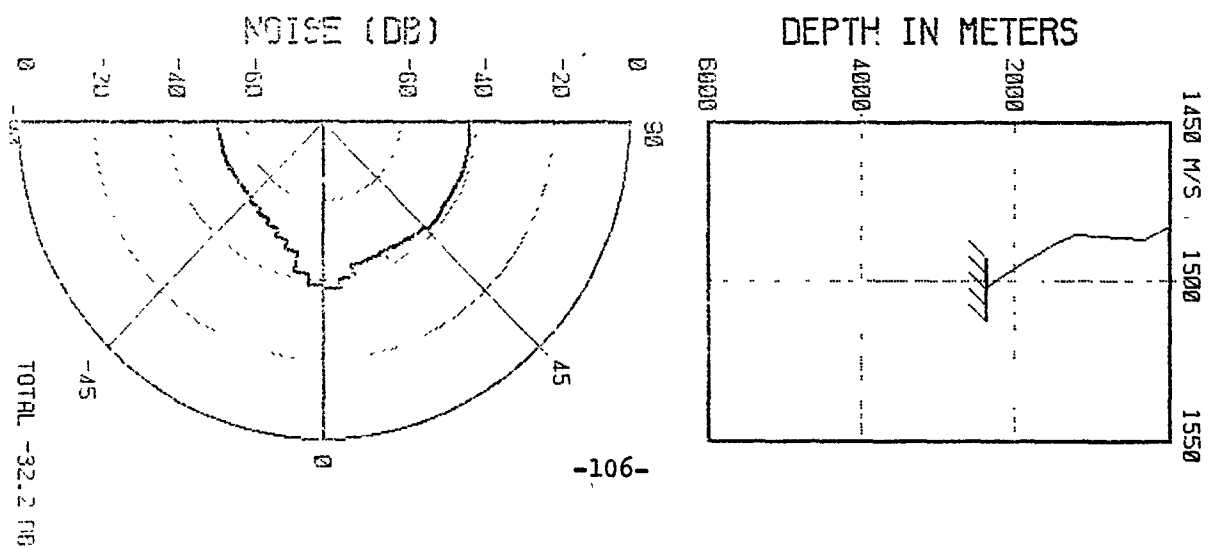
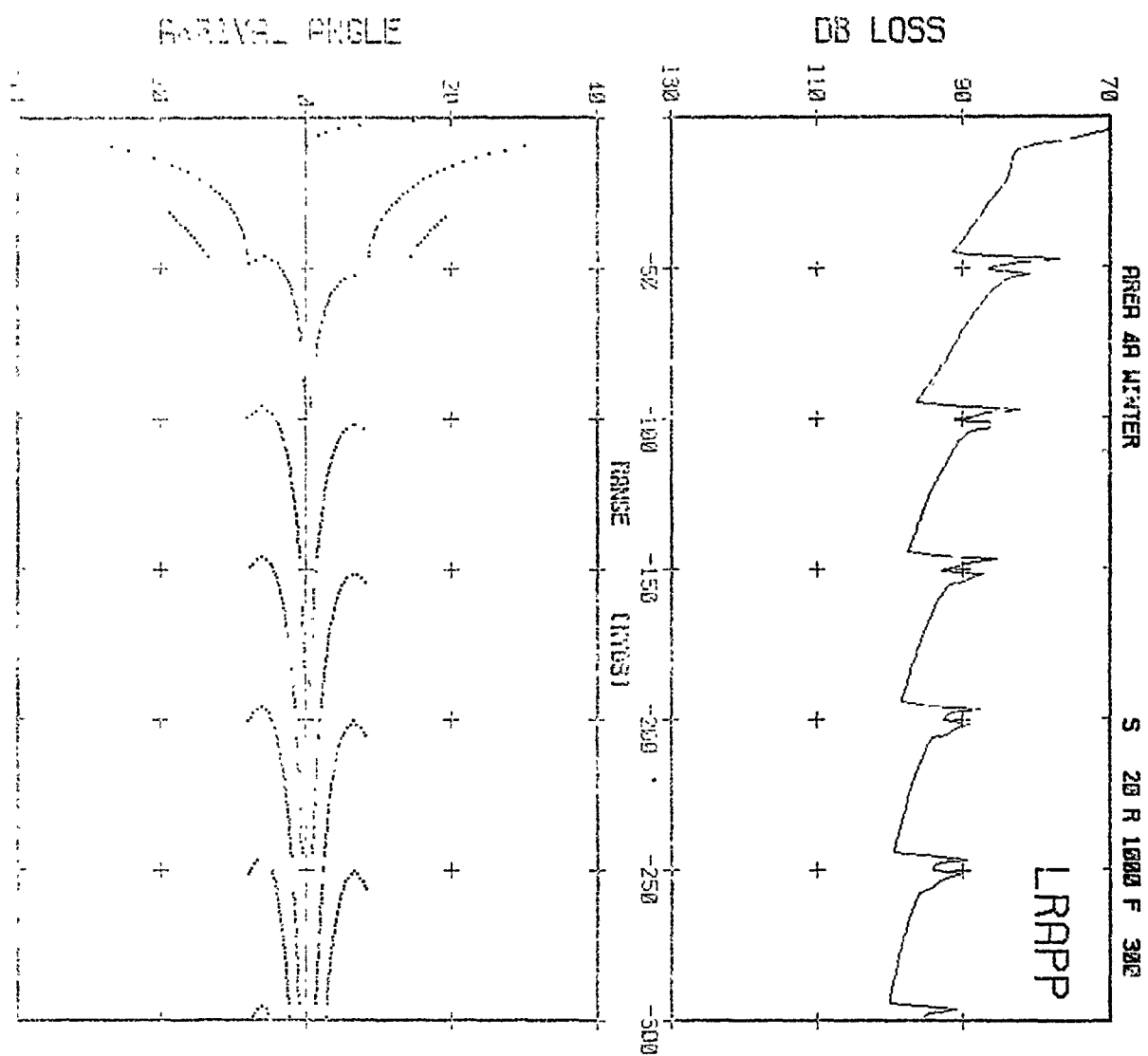


DEPTH IN METERS



NOISE (DB)



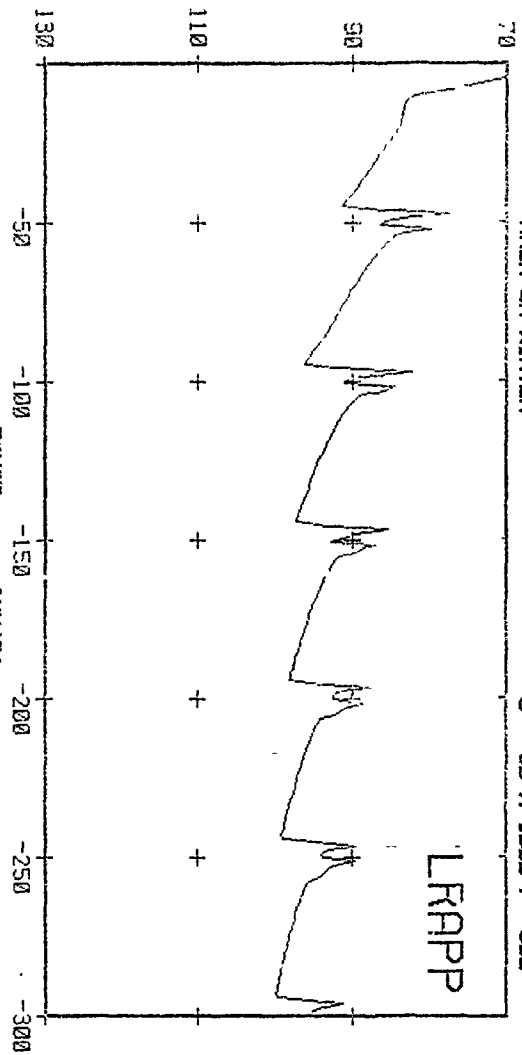


AREA 47 WINTER

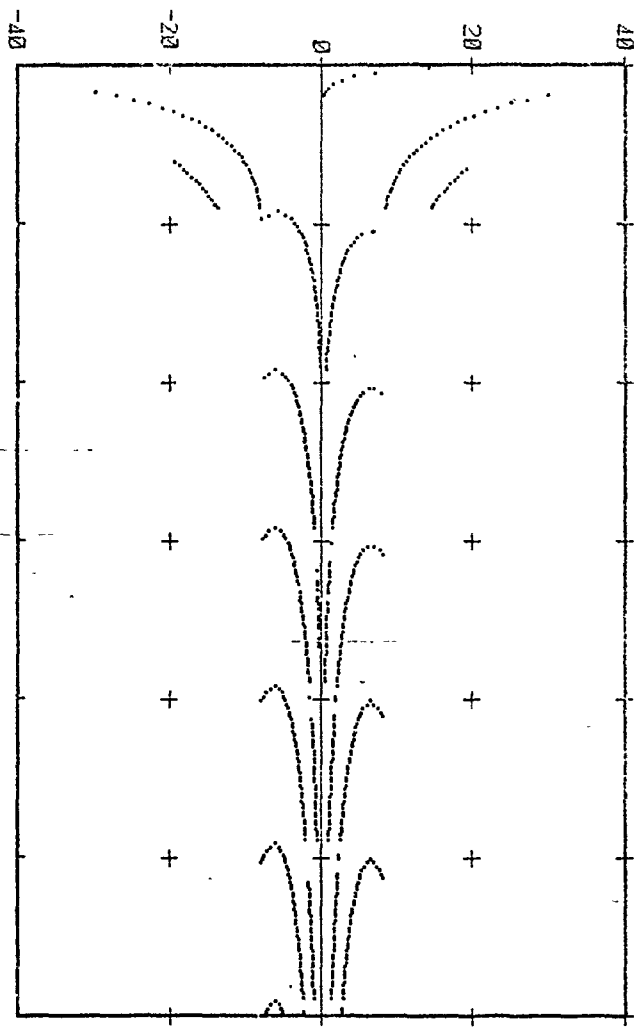
S 50 R 1000 F 300

1450 M/S 1500 1550

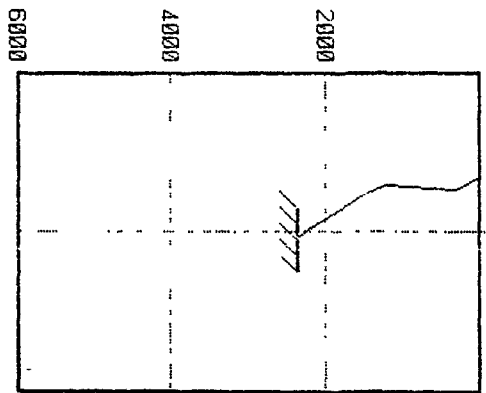
DB LOSS



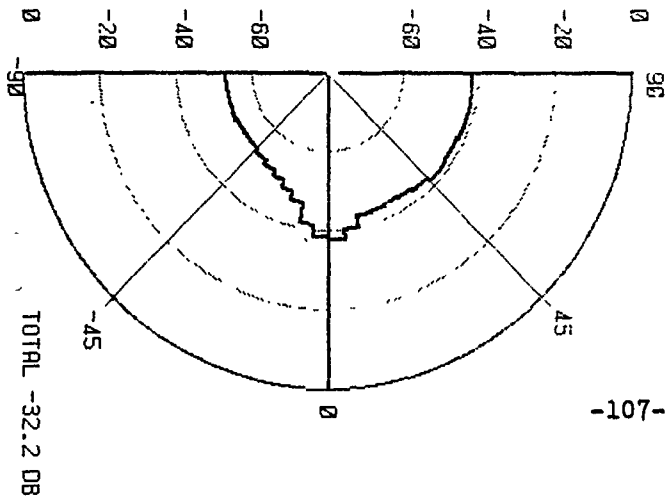
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



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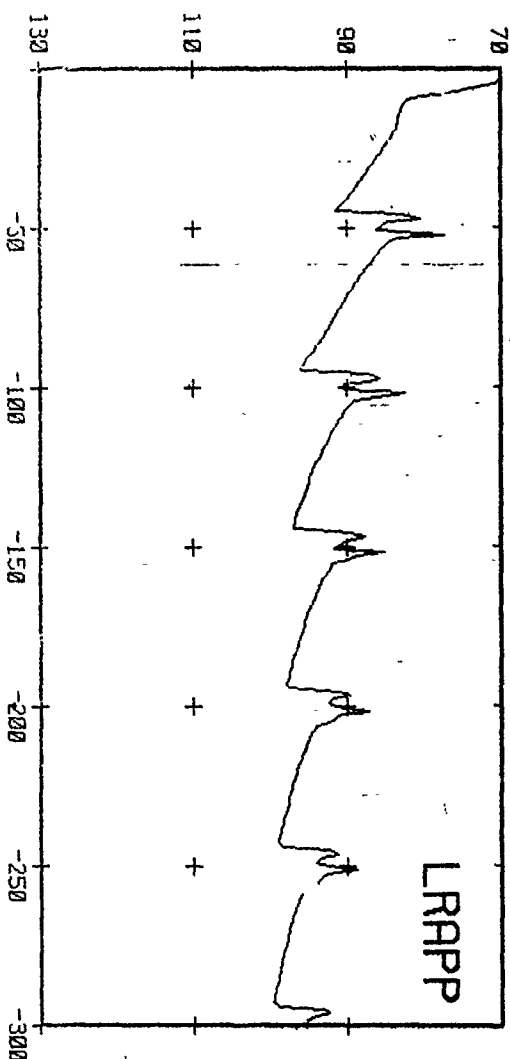
TOTAL -32.2 DB

FRER AR HINTER

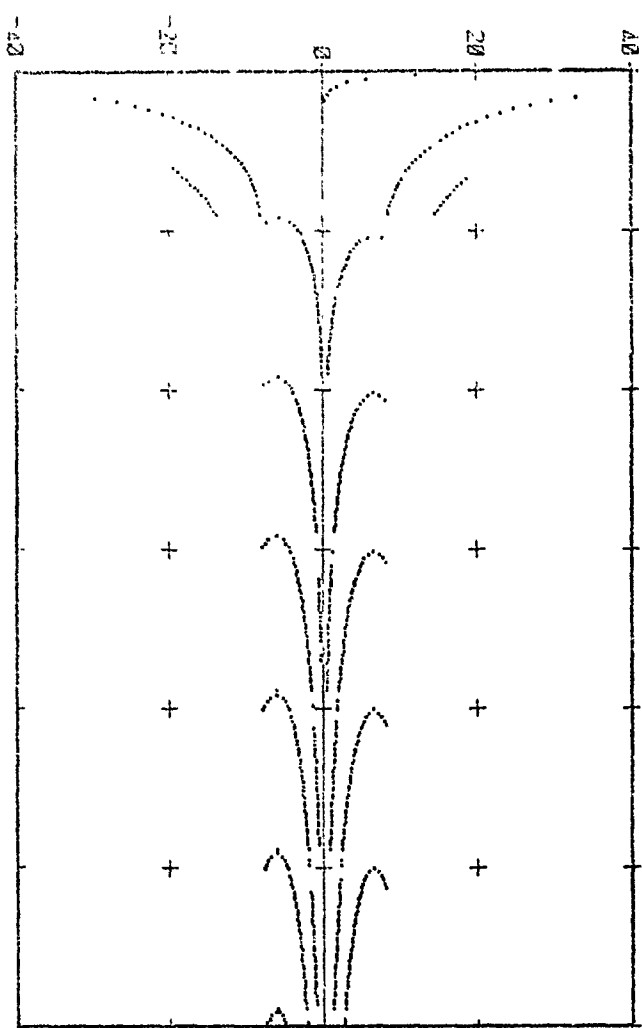
S 200 R 1000 F 300

LRAPP

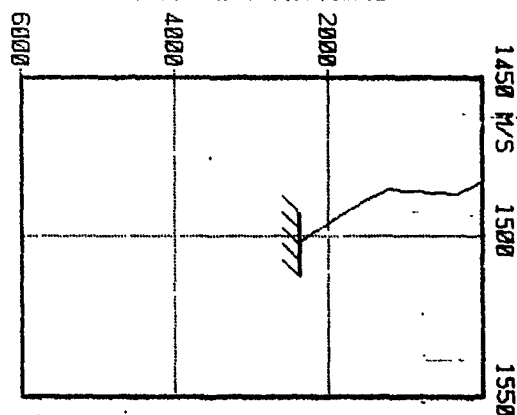
DB LOSS



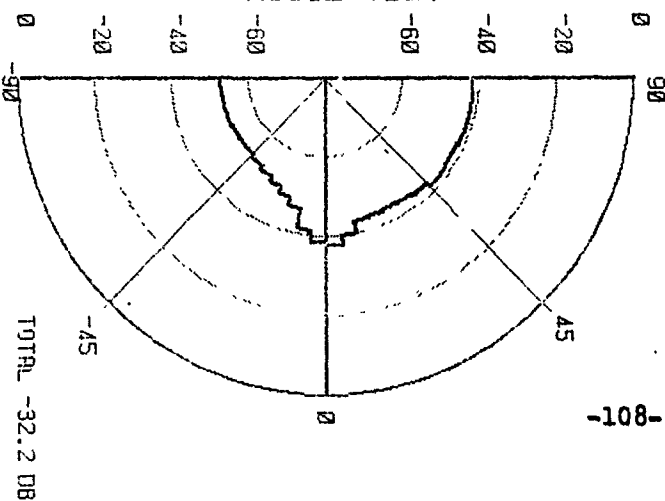
ARRIVAL ANGLE



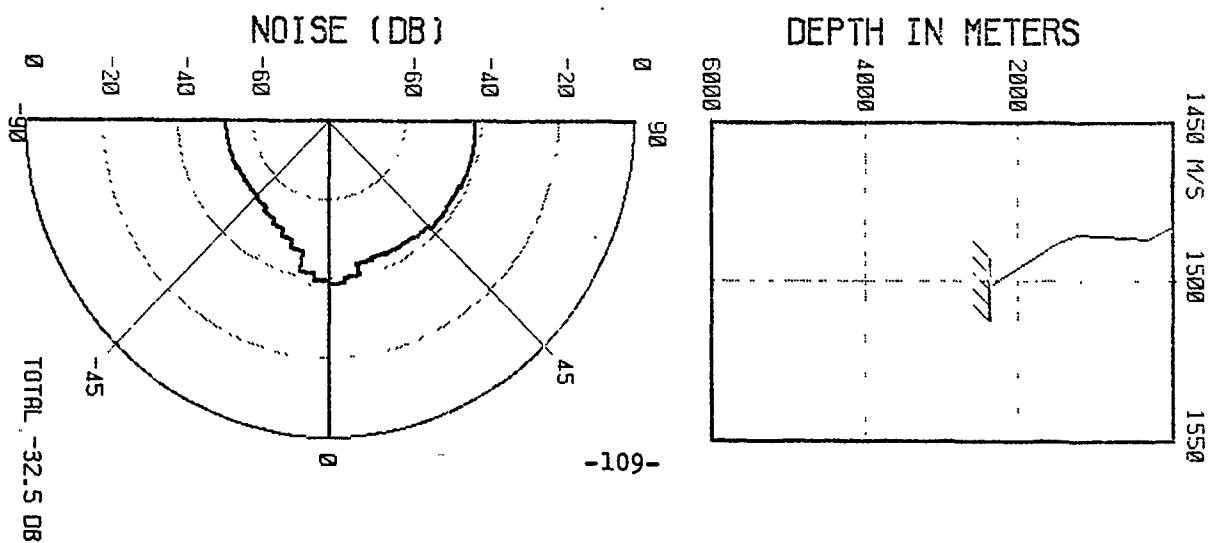
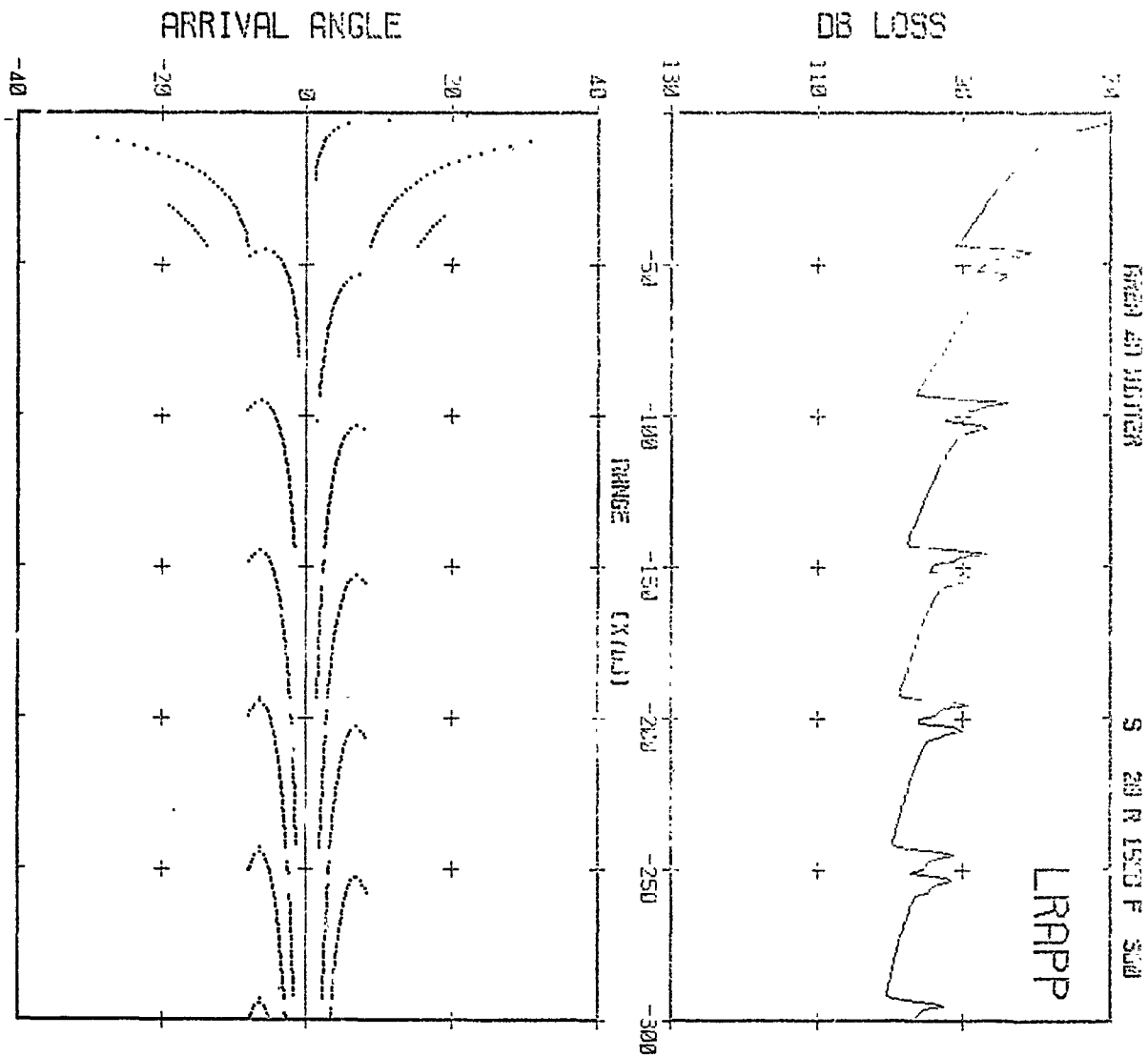
DEPTH IN METERS

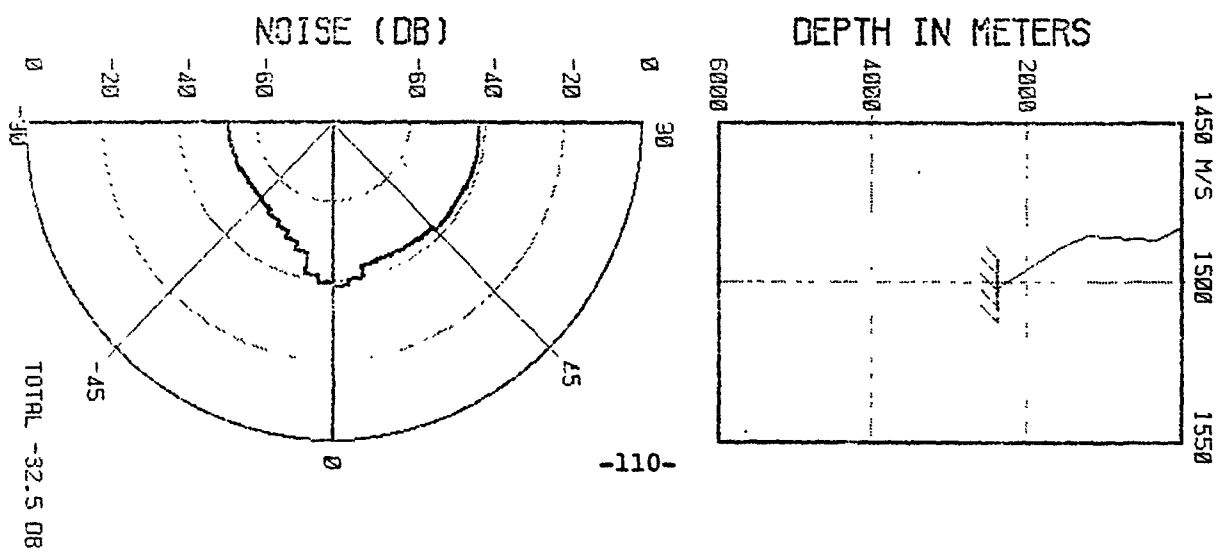
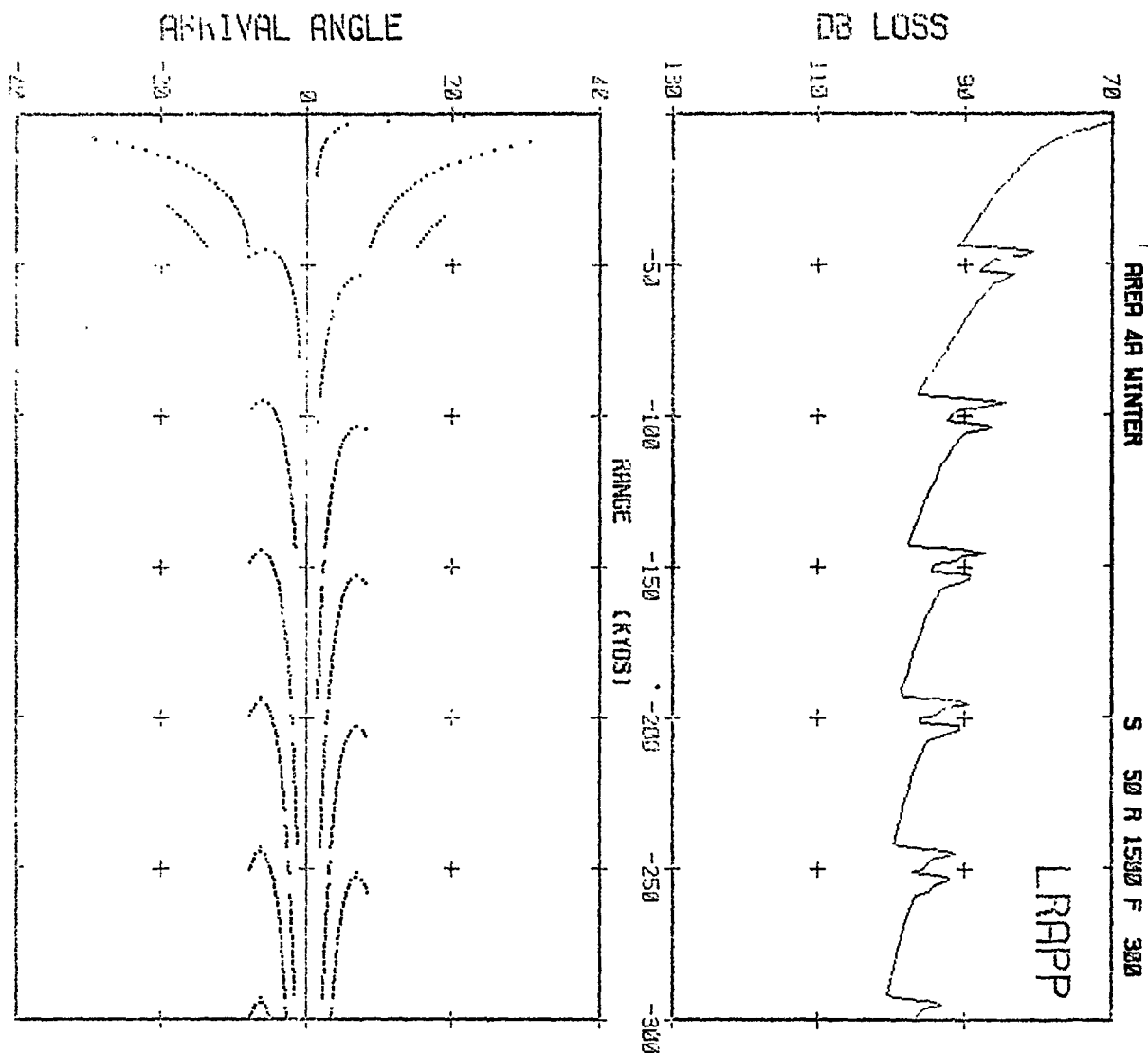


NOISE (DB)



TOTAL -32.2 DB



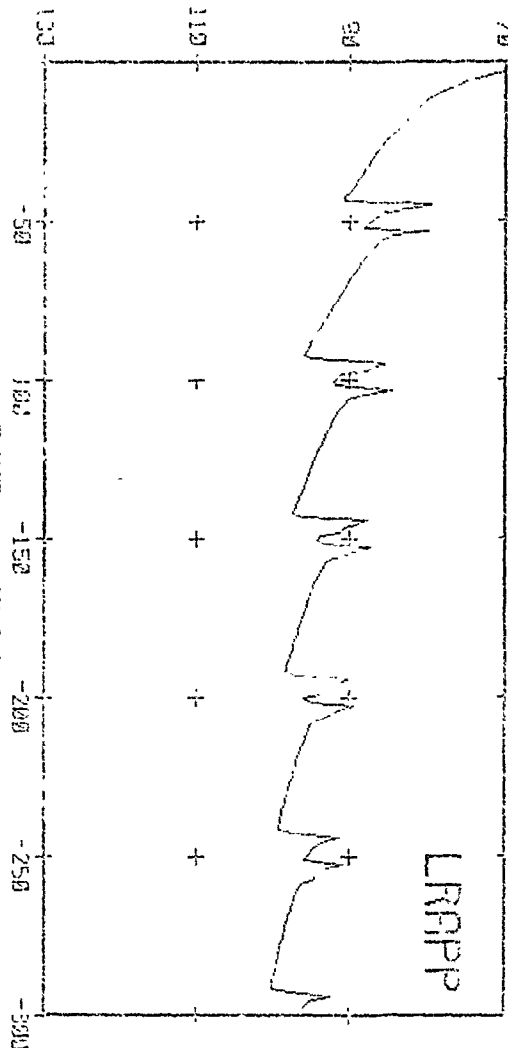


AREA 2A WINTER

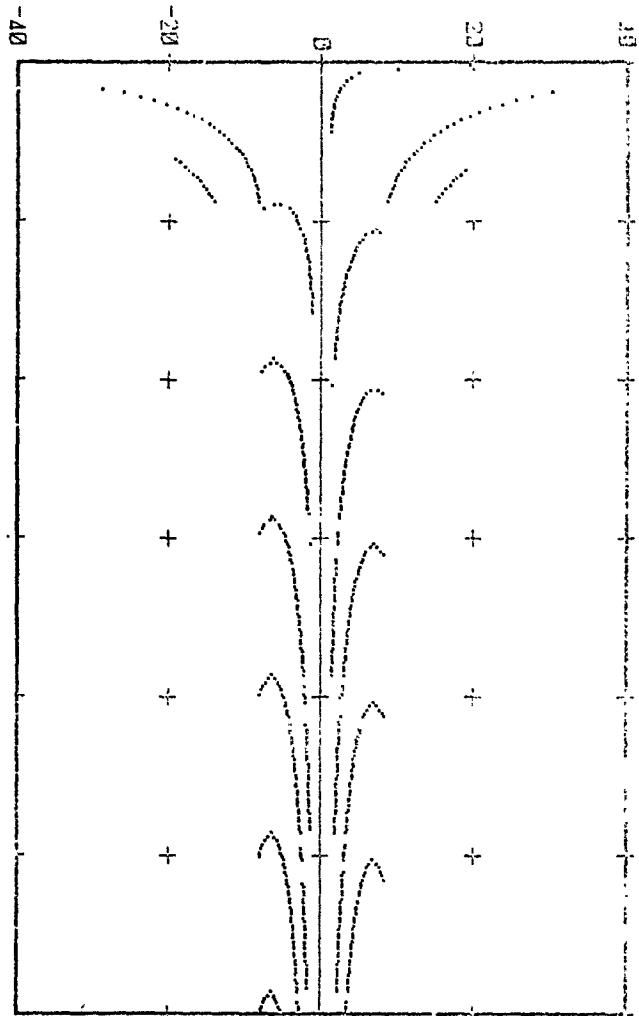
3 240 R 1530 F 34.0

1450 H/S 1500 1550

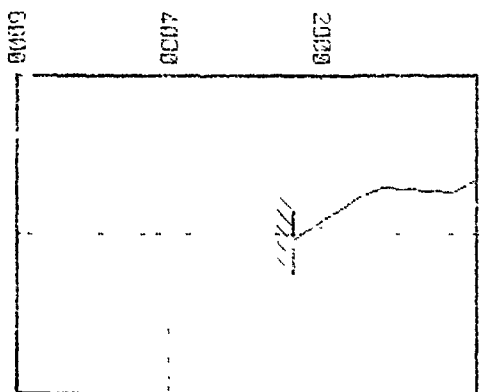
DB LOSS



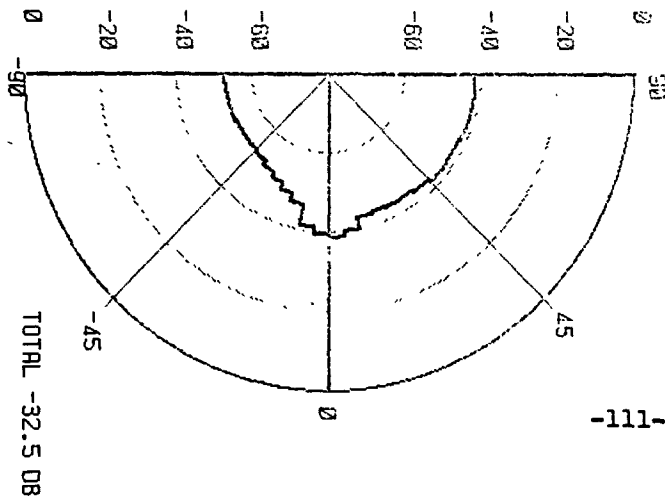
ARRIVAL ANGLE

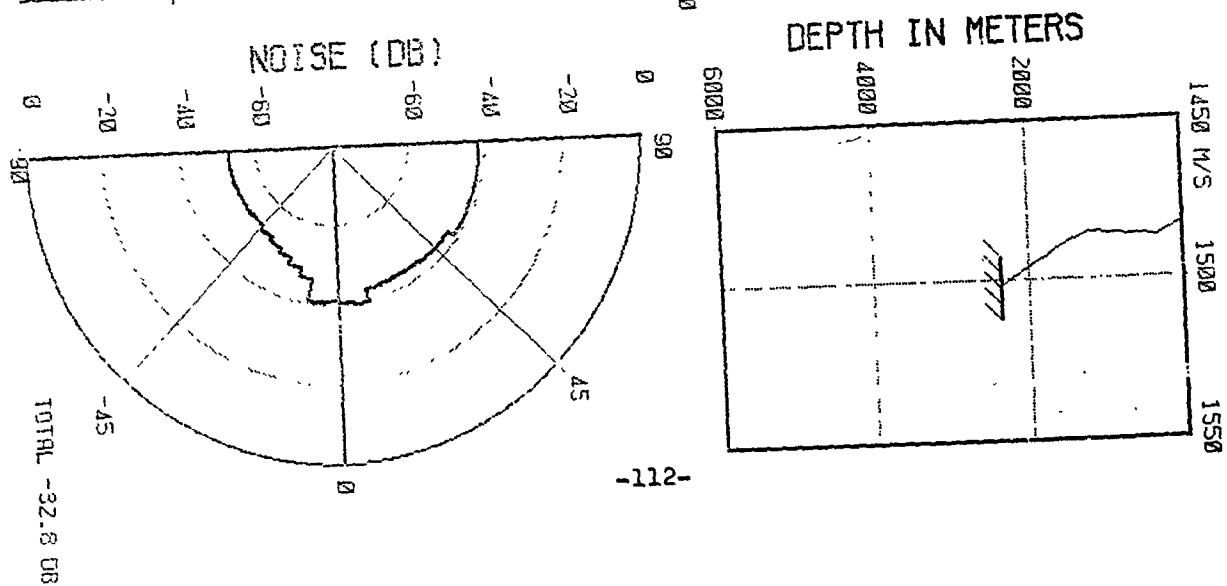
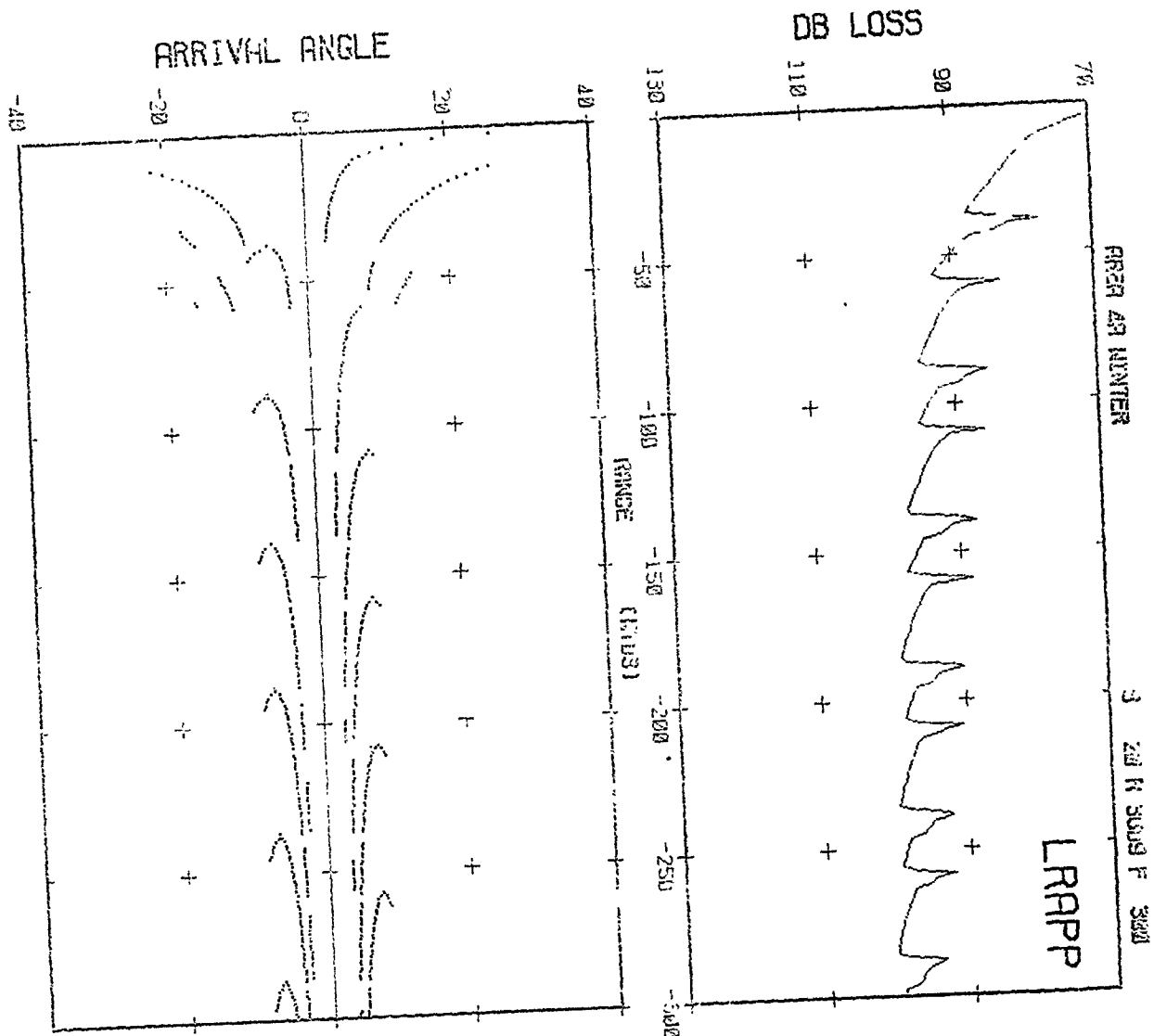


DEPTH IN METERS



NOISE (DB)





AREA 4R WINTER

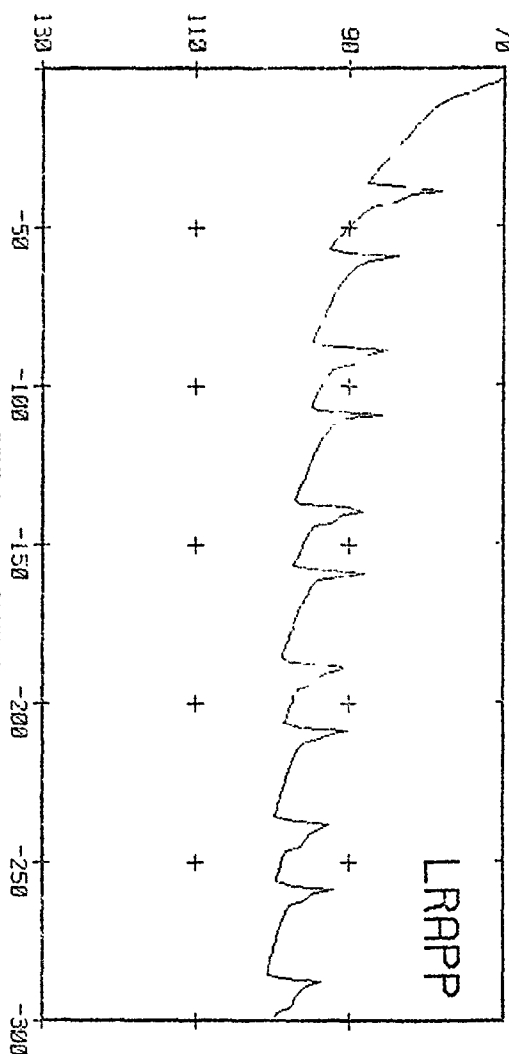
S 50 R 3603 F 302

1450 M/S

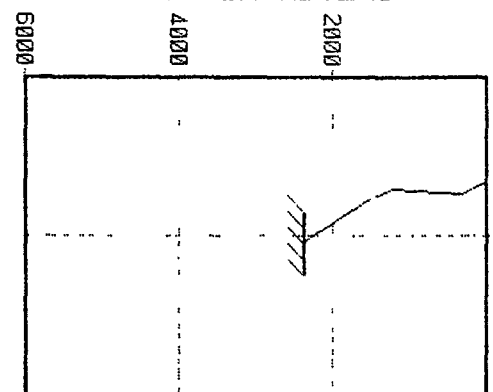
1500

1550

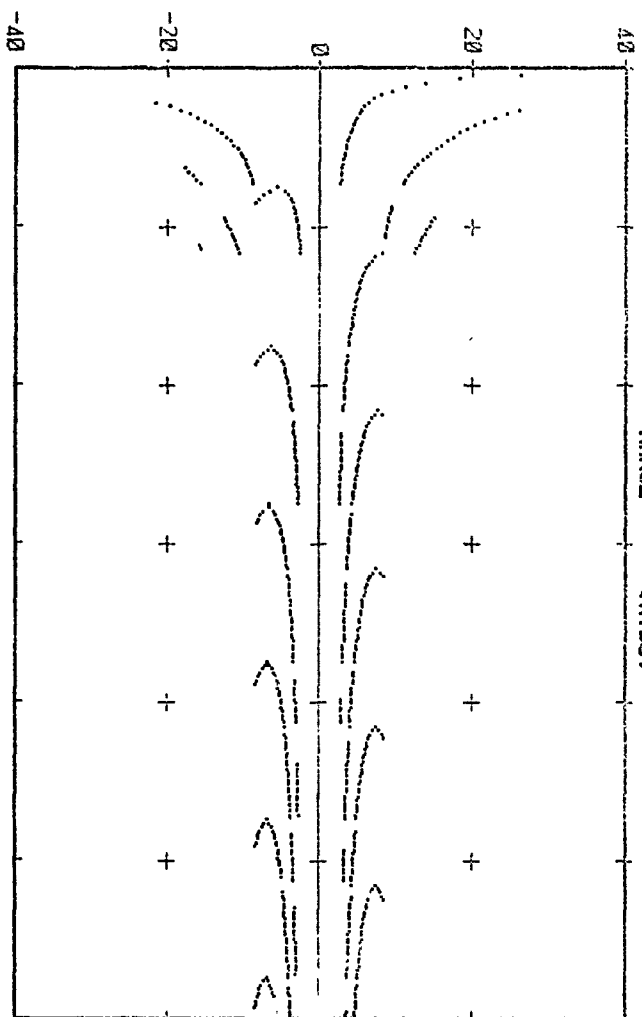
DB LOSS



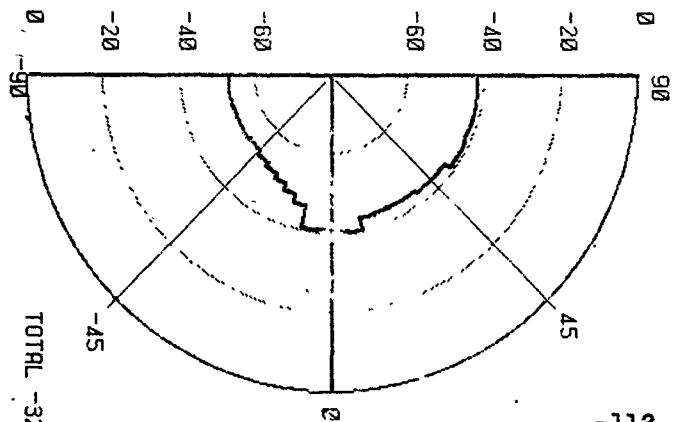
DEPTH IN METERS



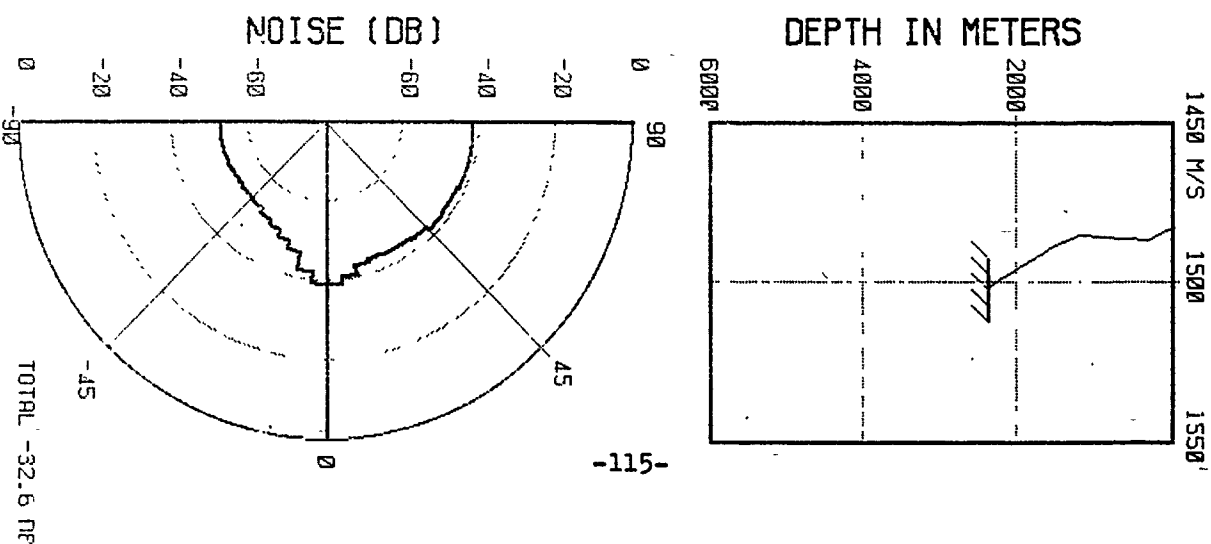
ARRIVAL ANGLE

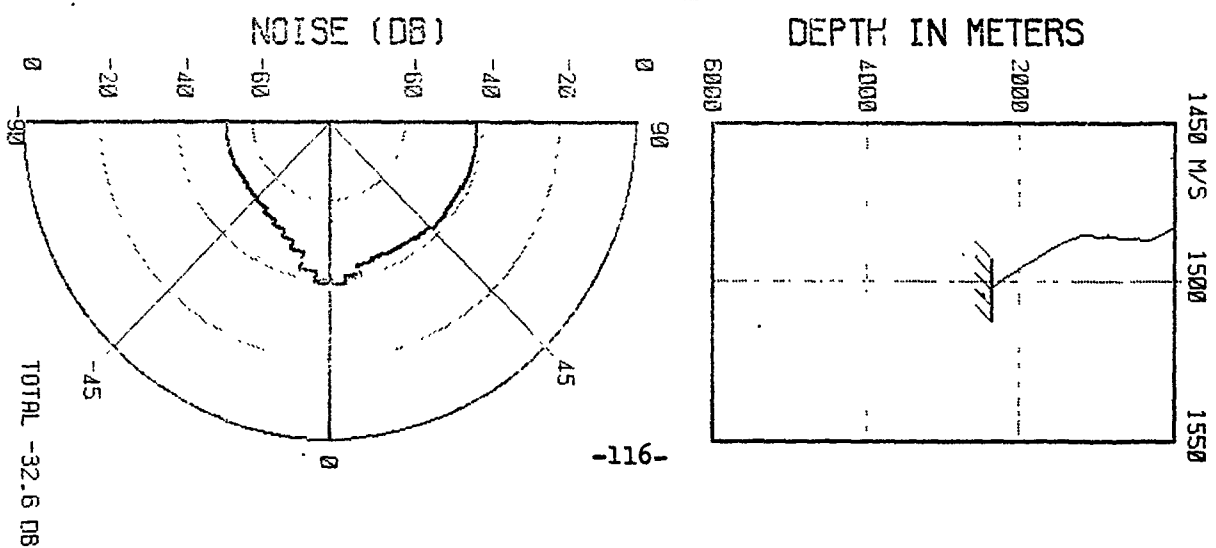
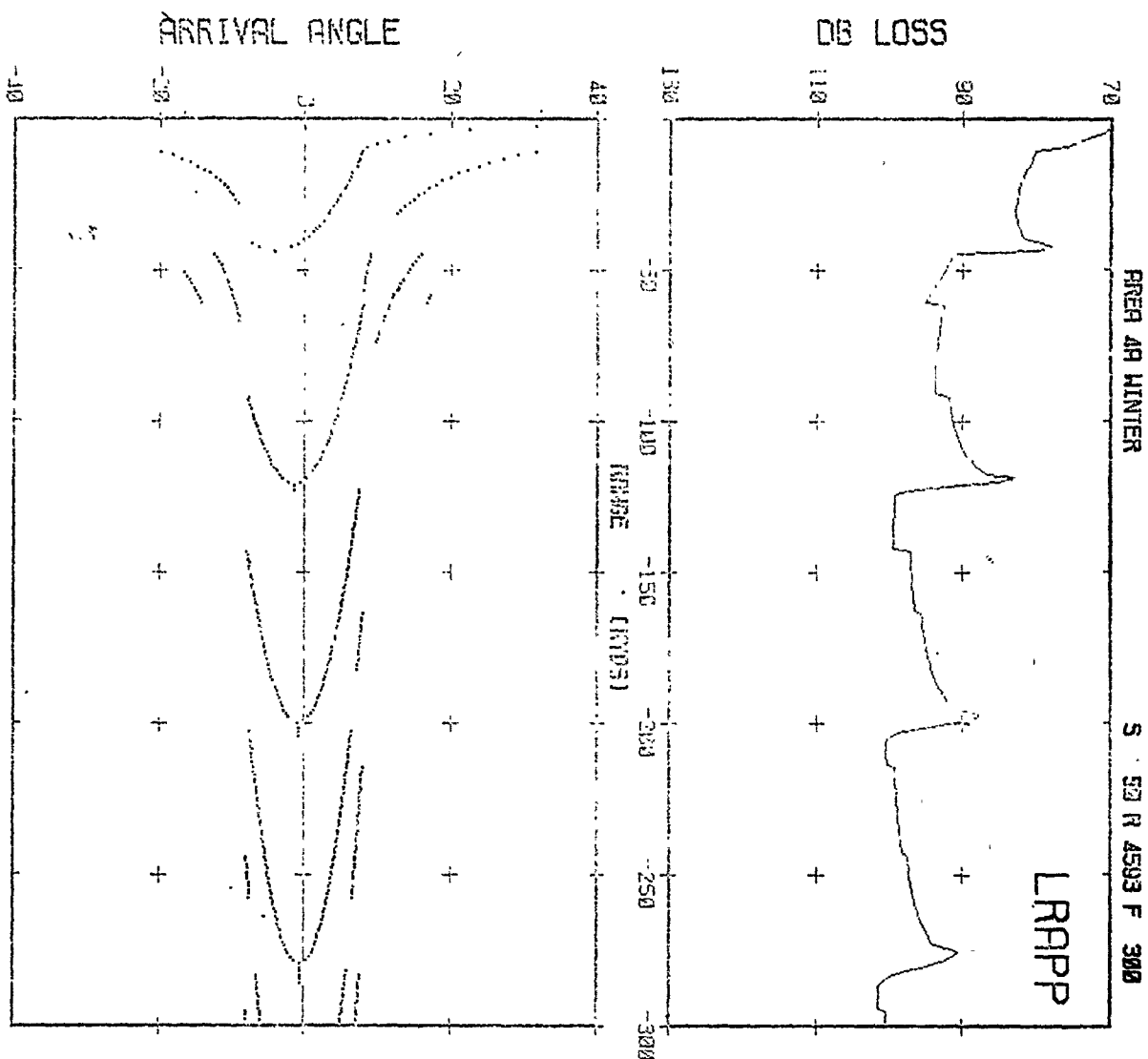


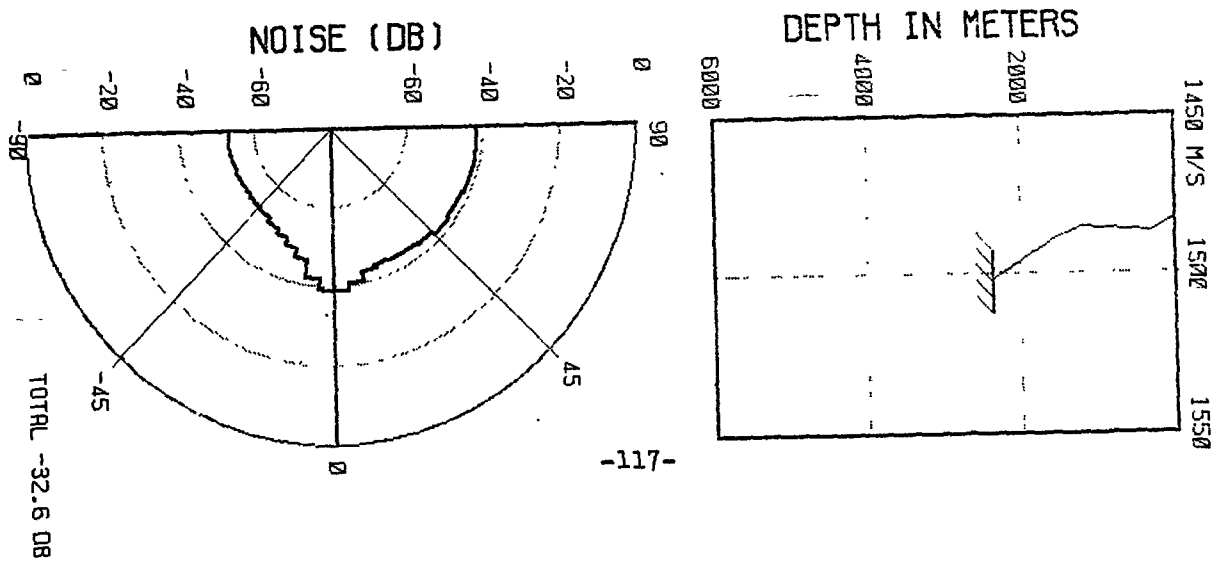
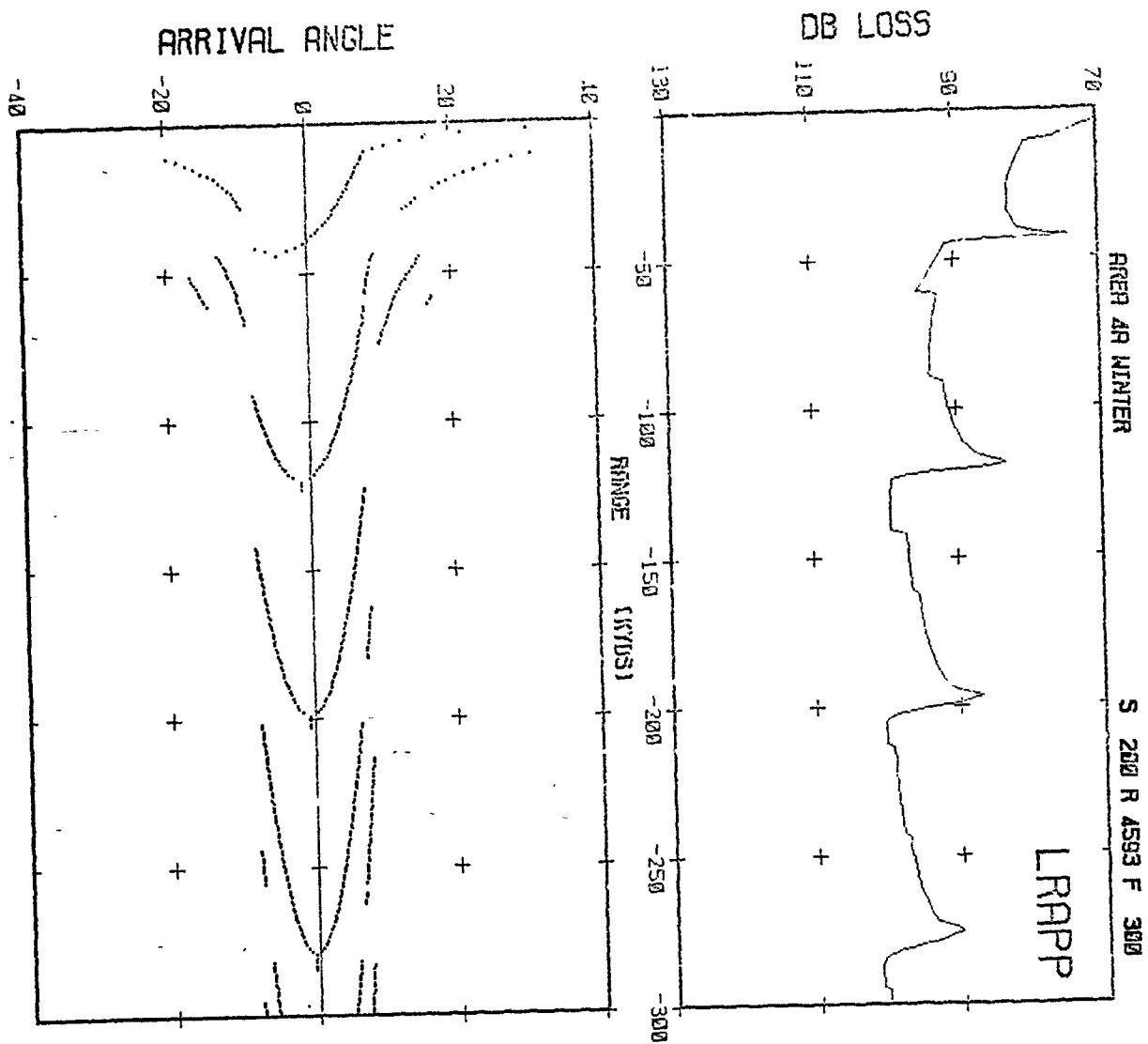
NOISE (DB)



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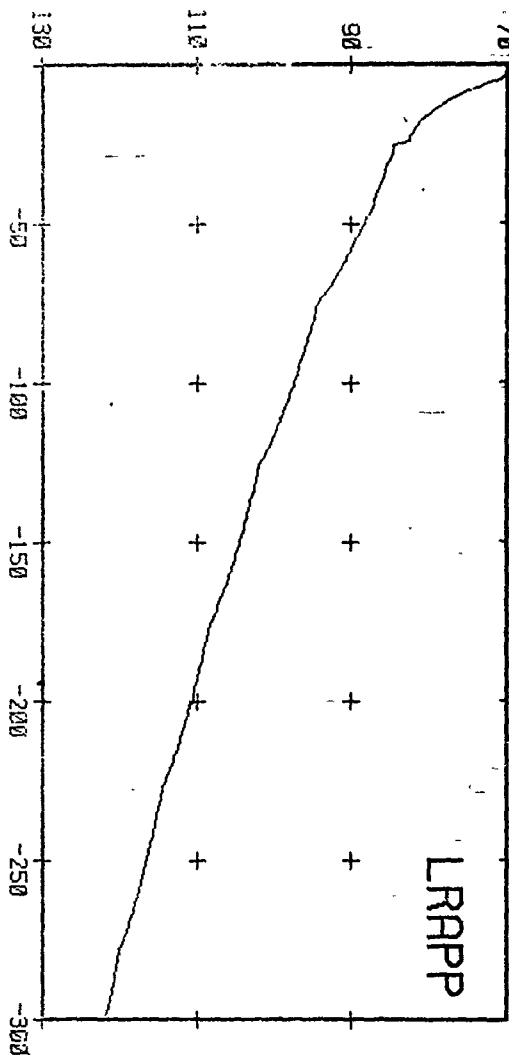


AREA 4A WINTER

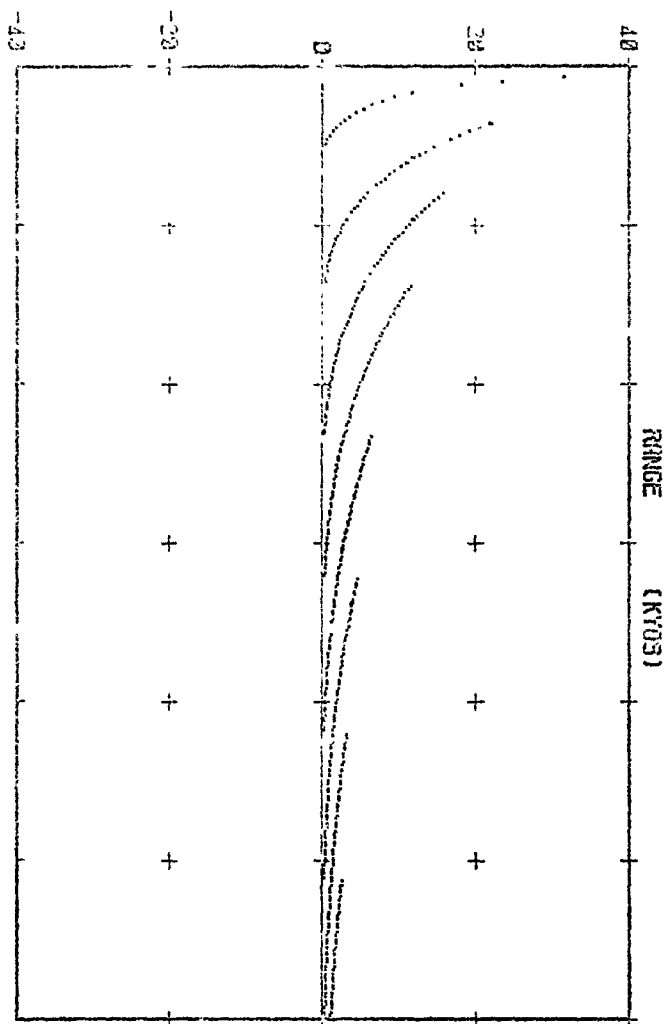
S 20 R 7798 F 300

1450 M/S 1500 1550

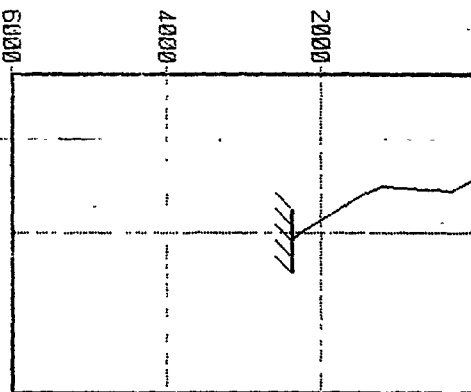
DB LOSS



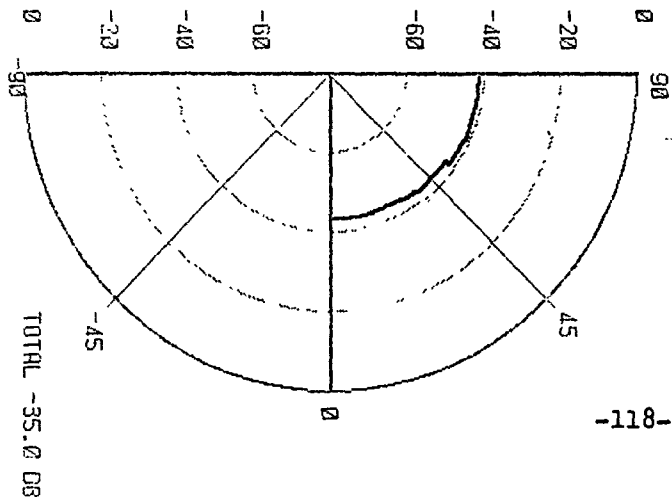
ARRIVAL ANGLE



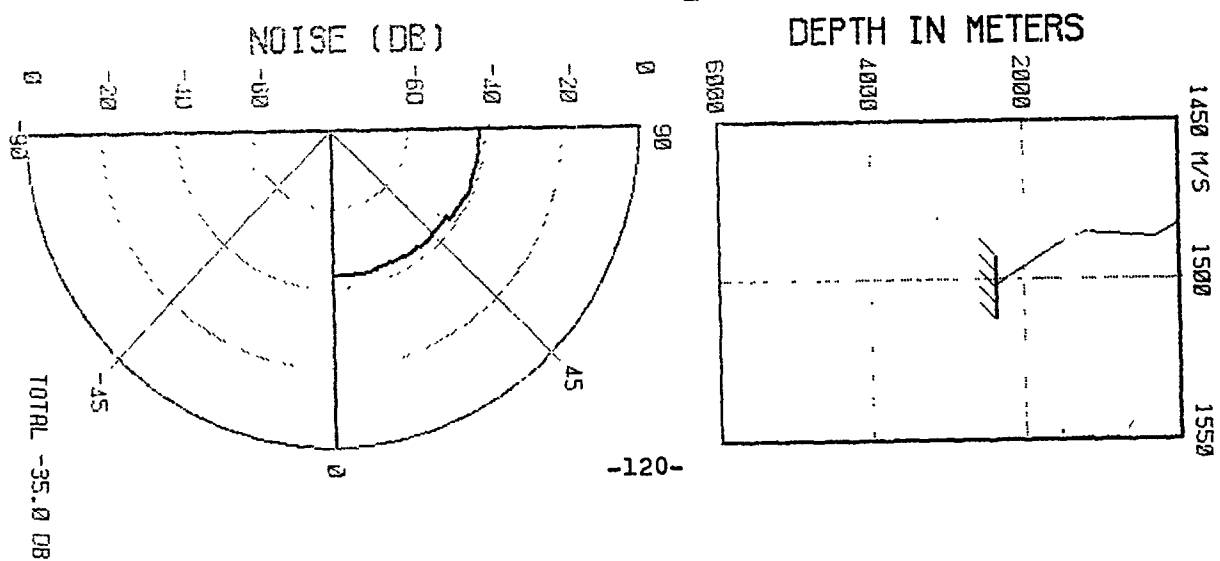
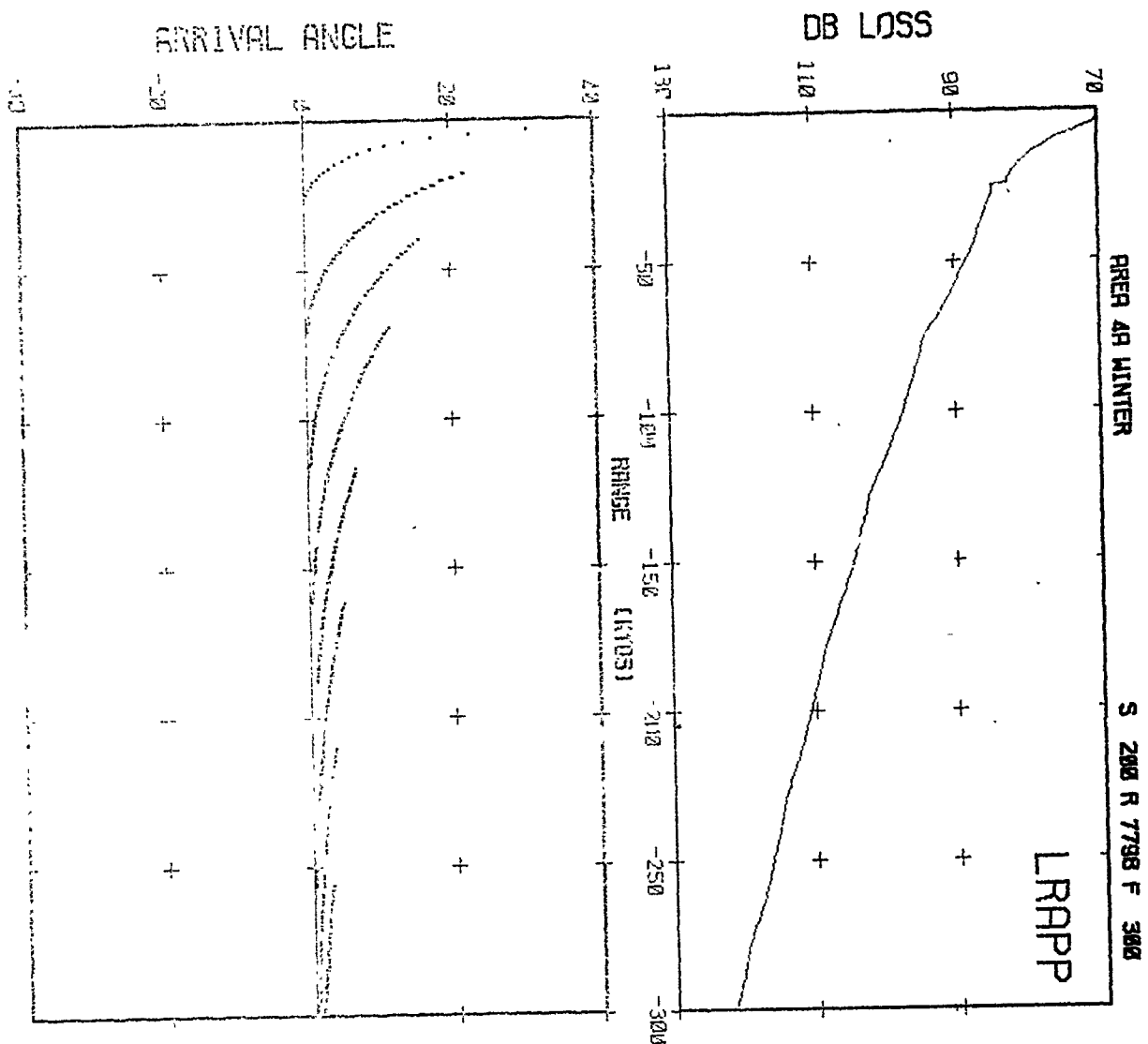
DEPTH IN METERS

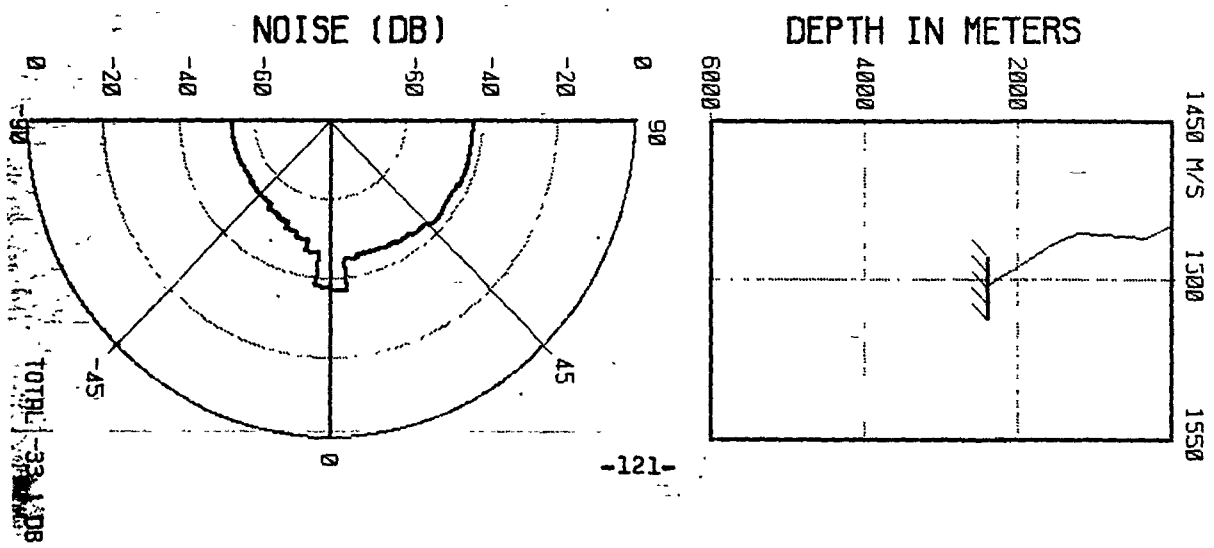
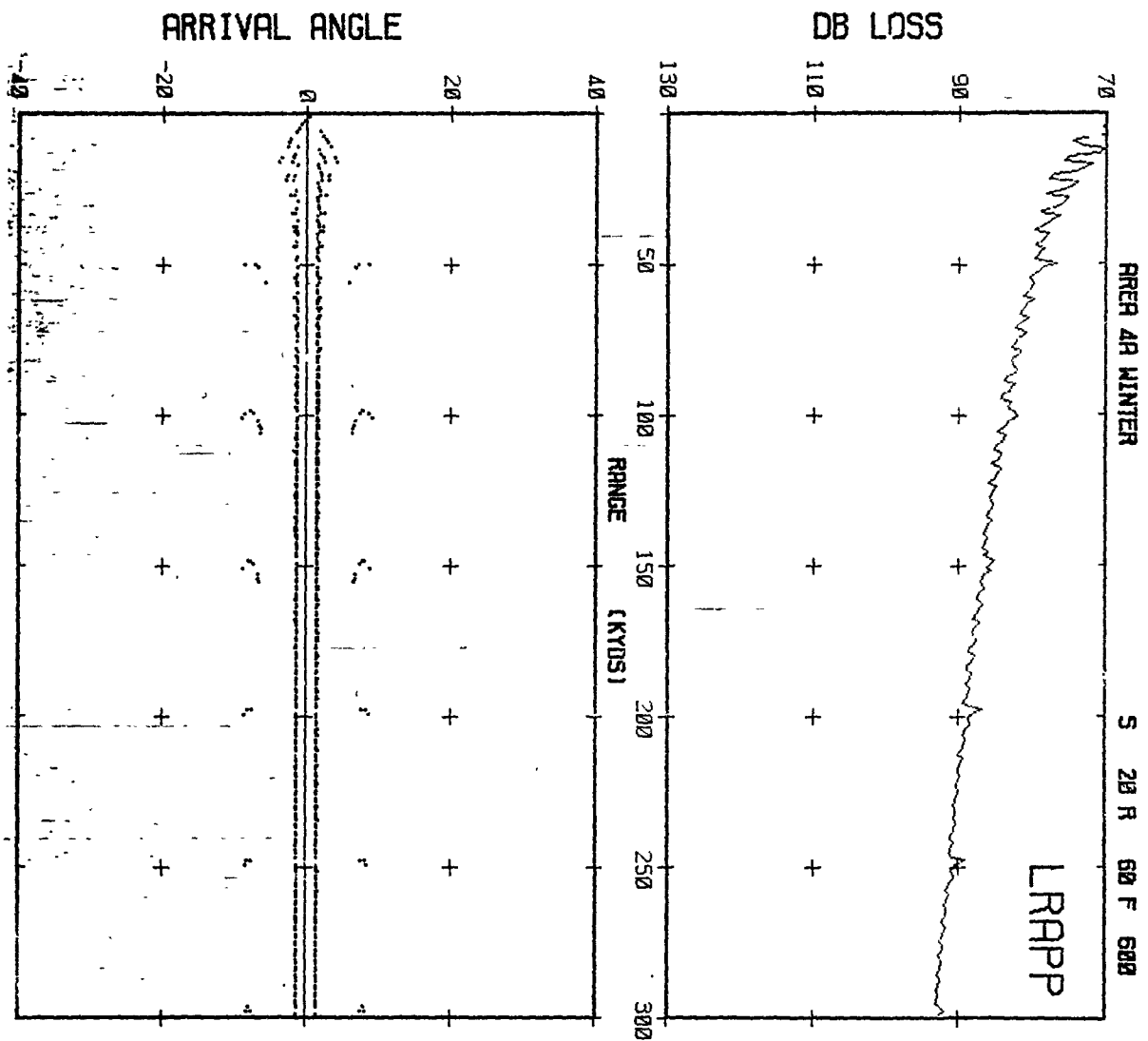


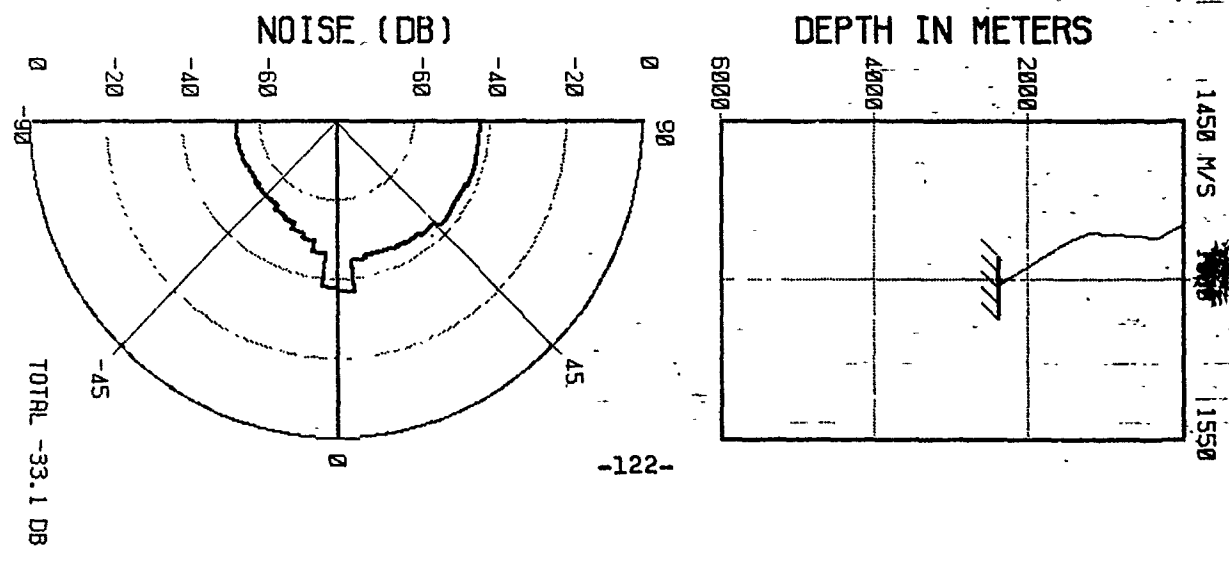
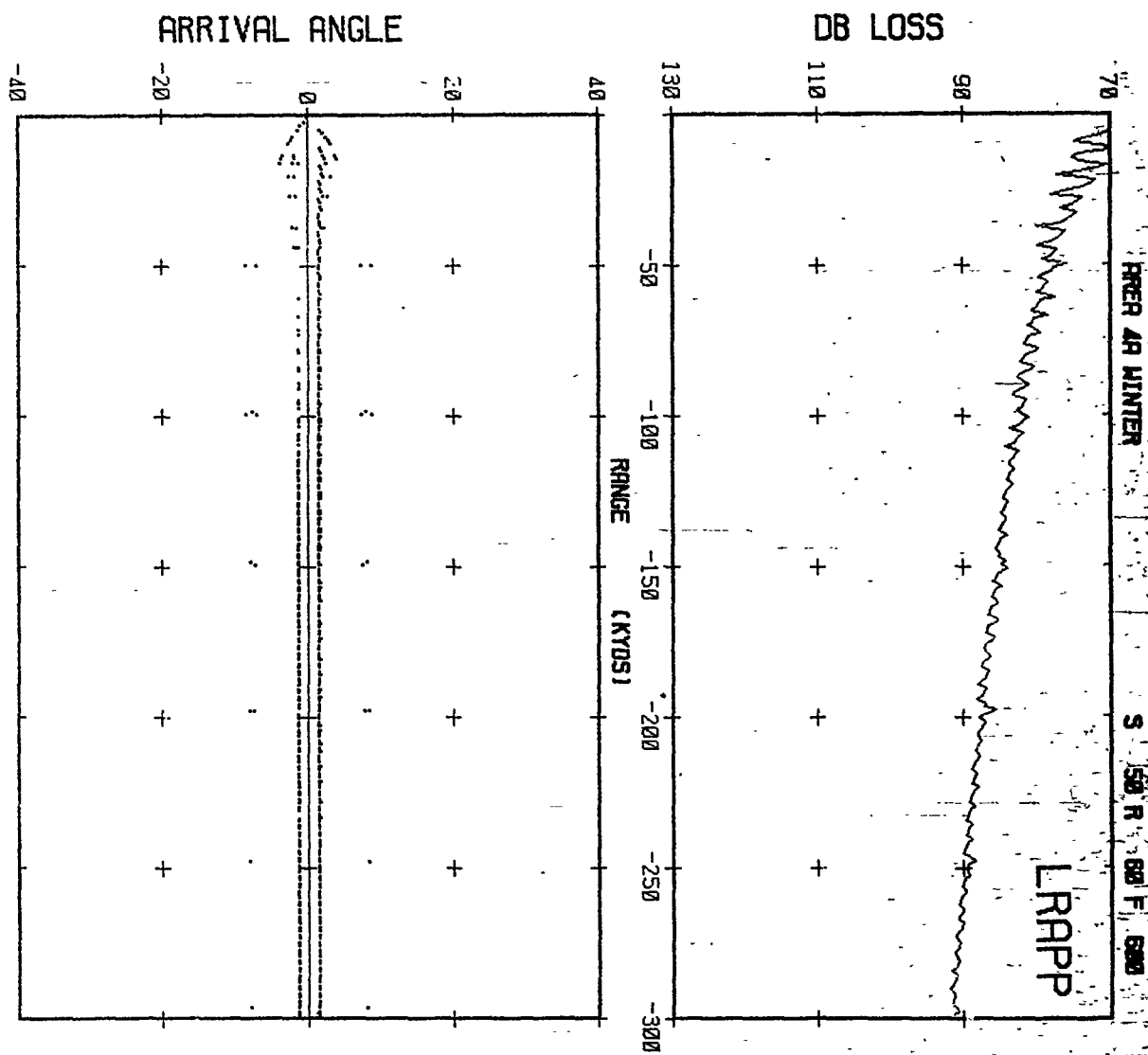
NOISE (DB)

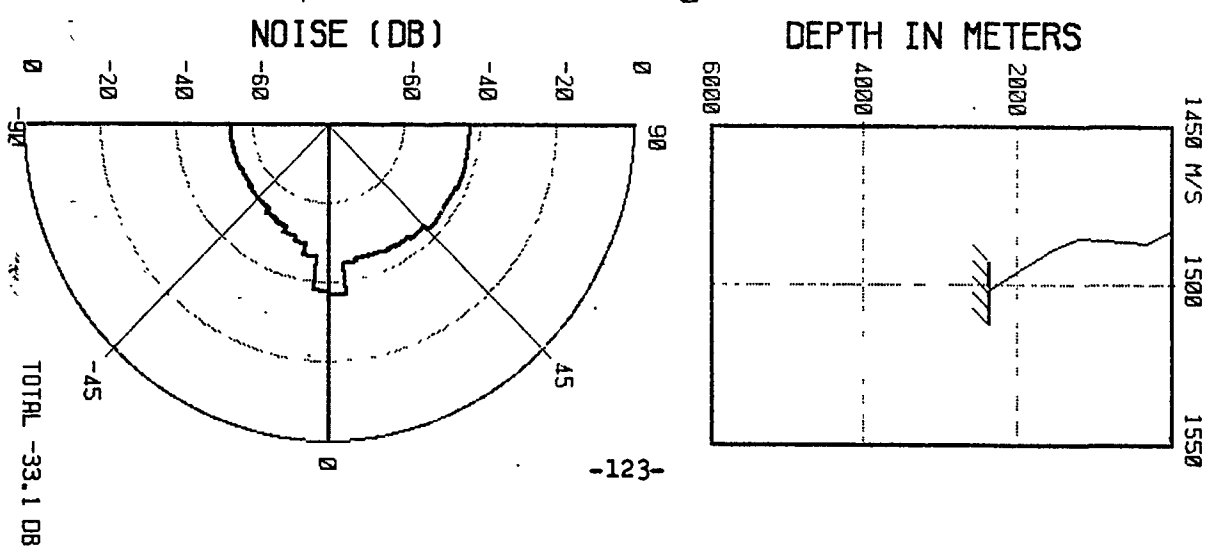
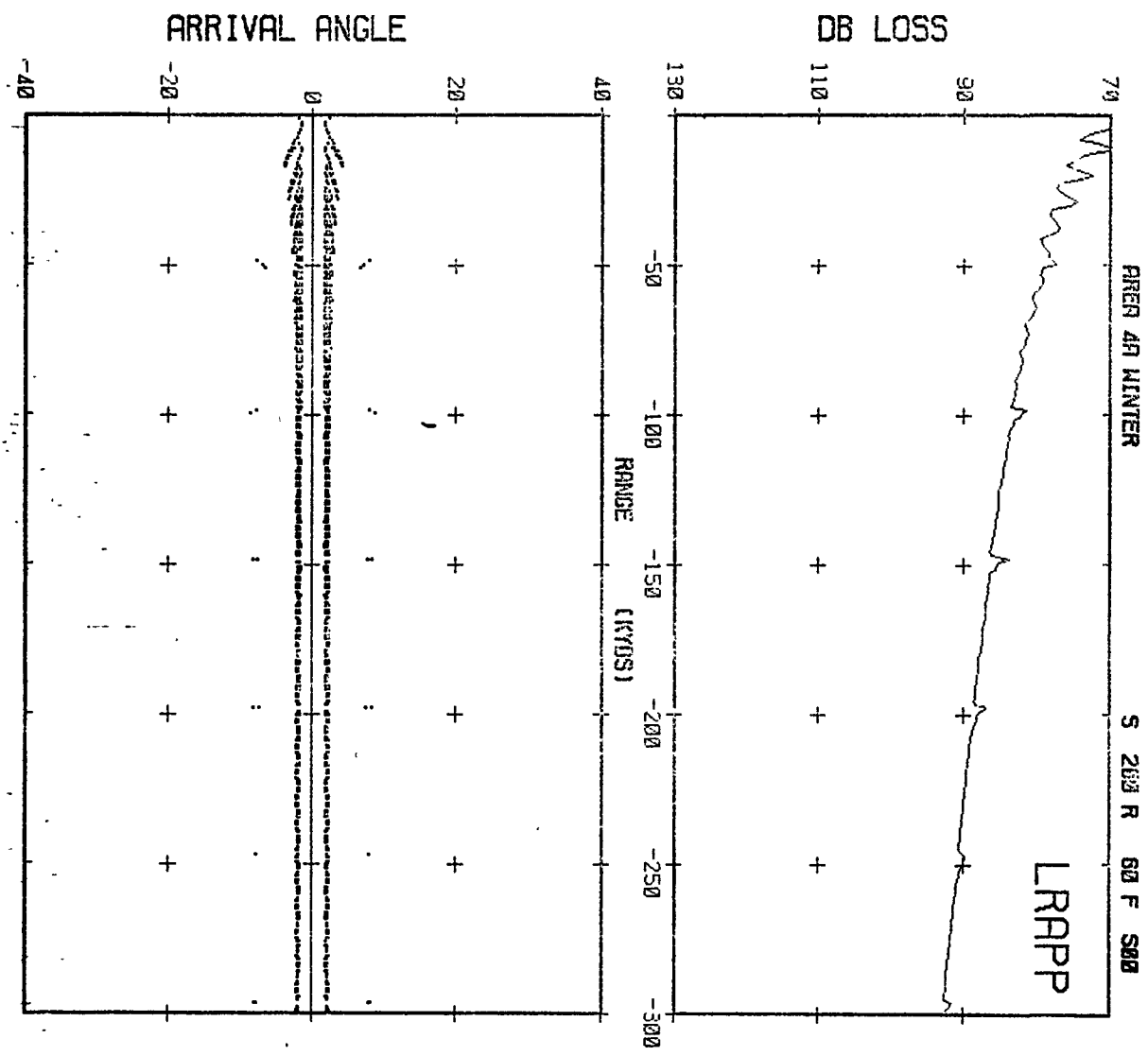


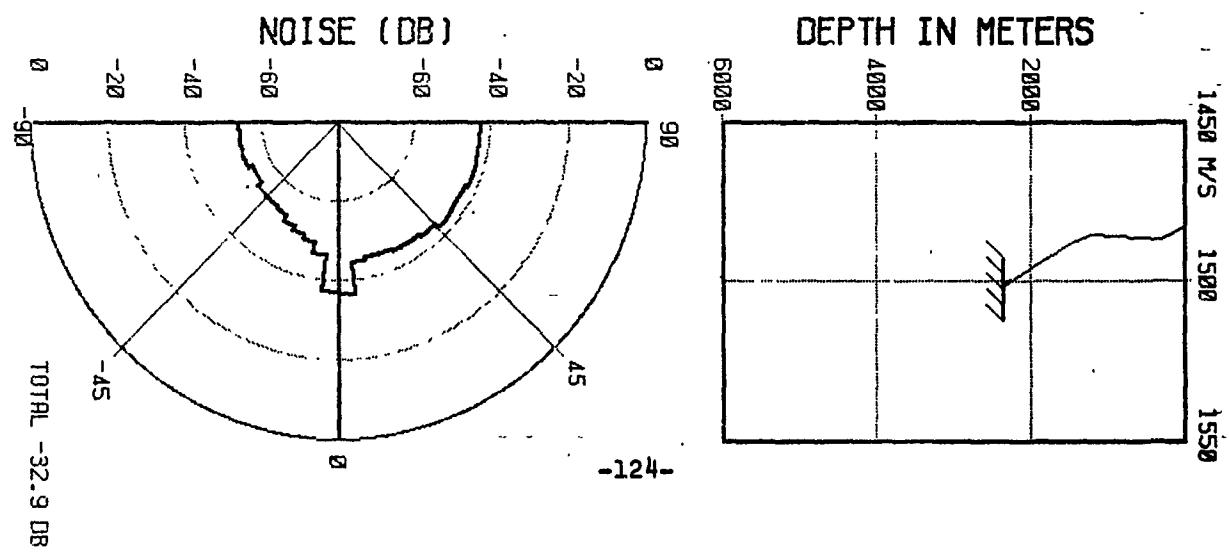
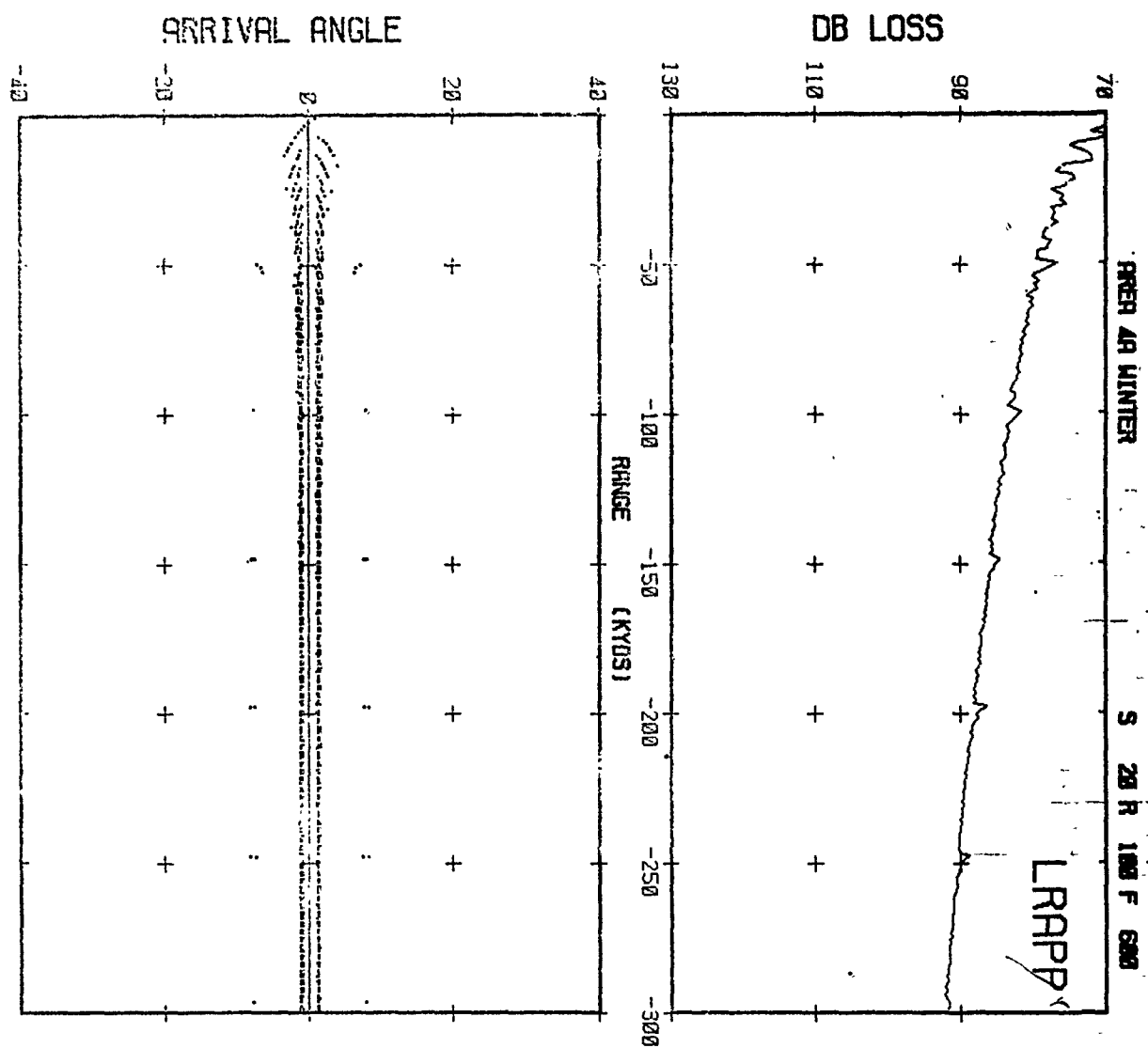
-118-

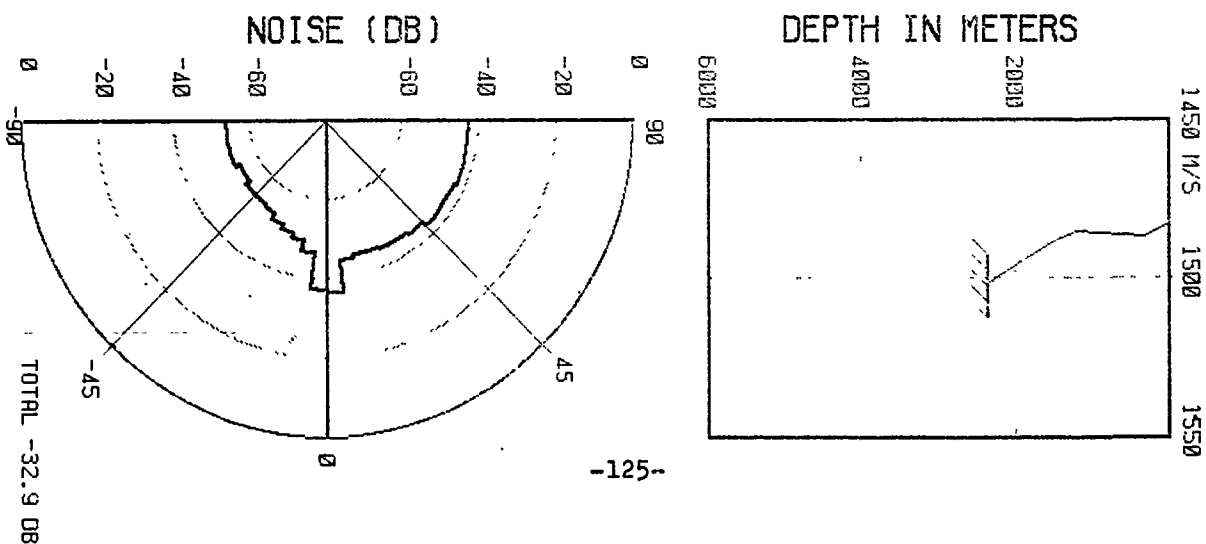
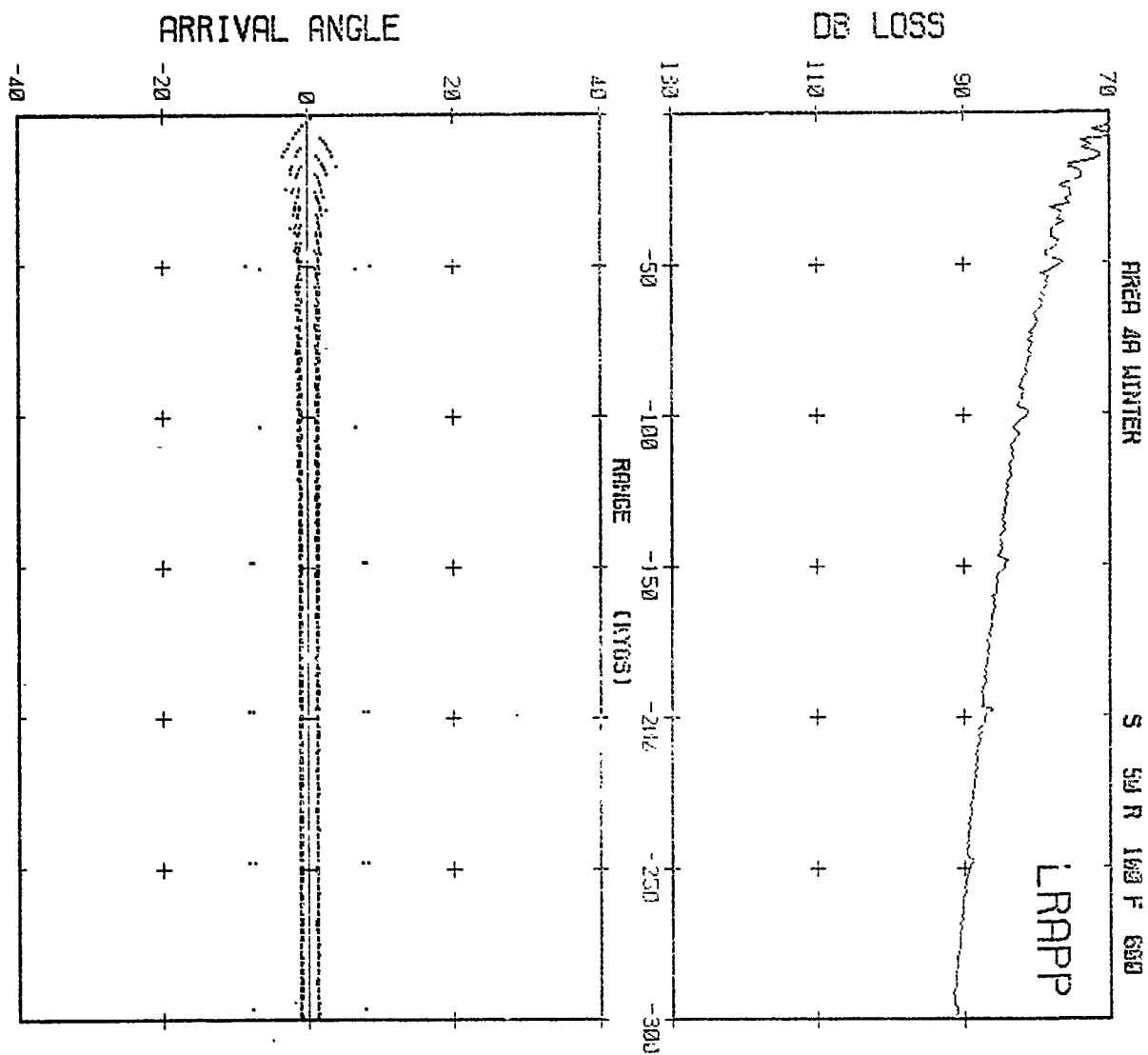










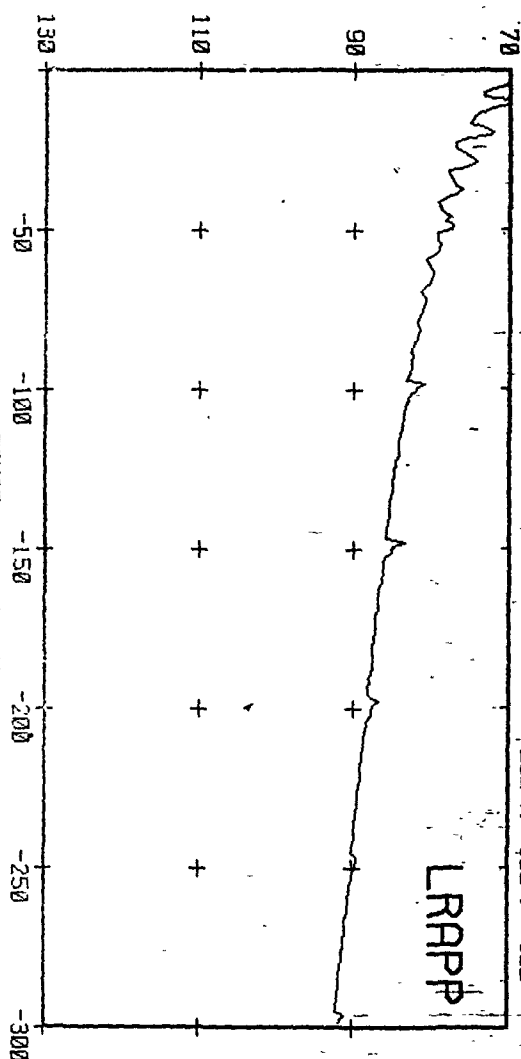


PREP AIR HINTER

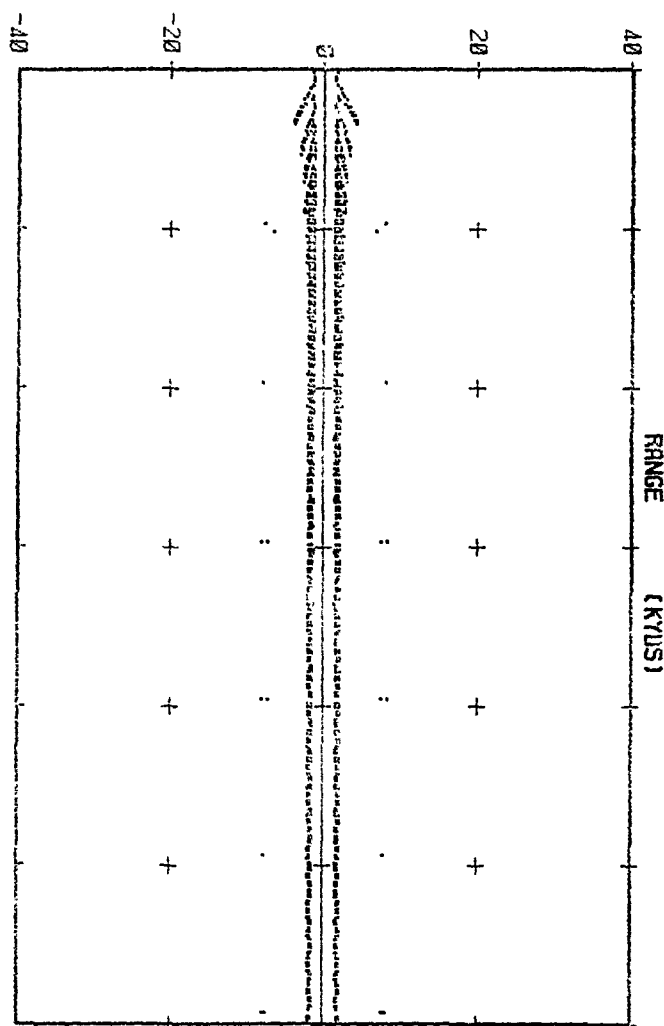
S 200 R 100 F 600

1450 M/S 1500 1550

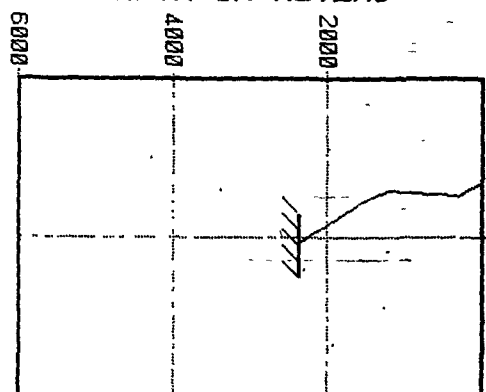
DB LOSS



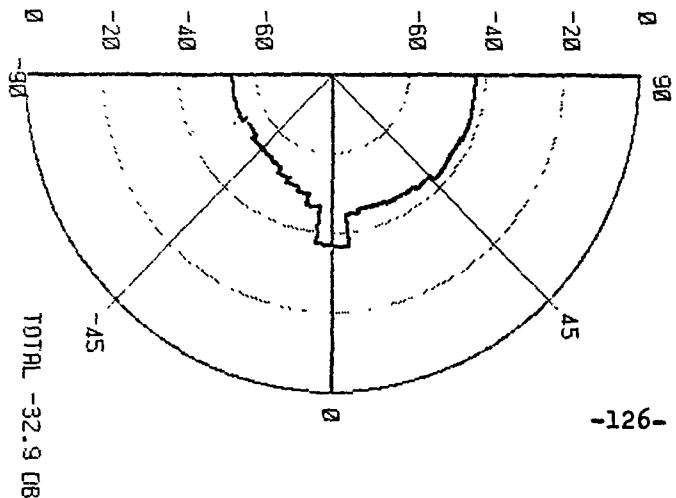
ARRIVAL ANGLE

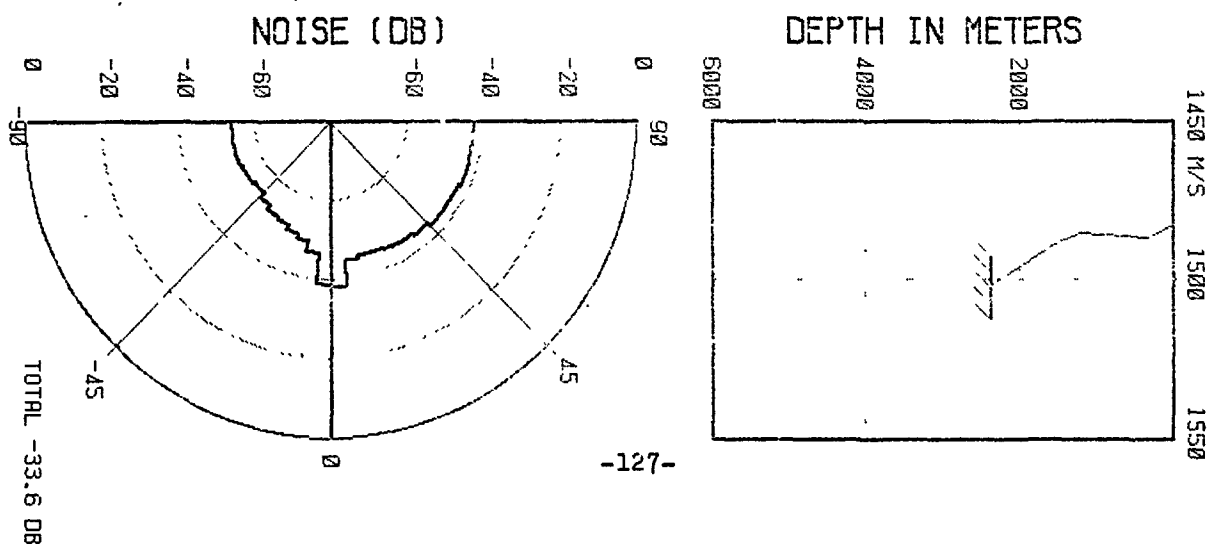
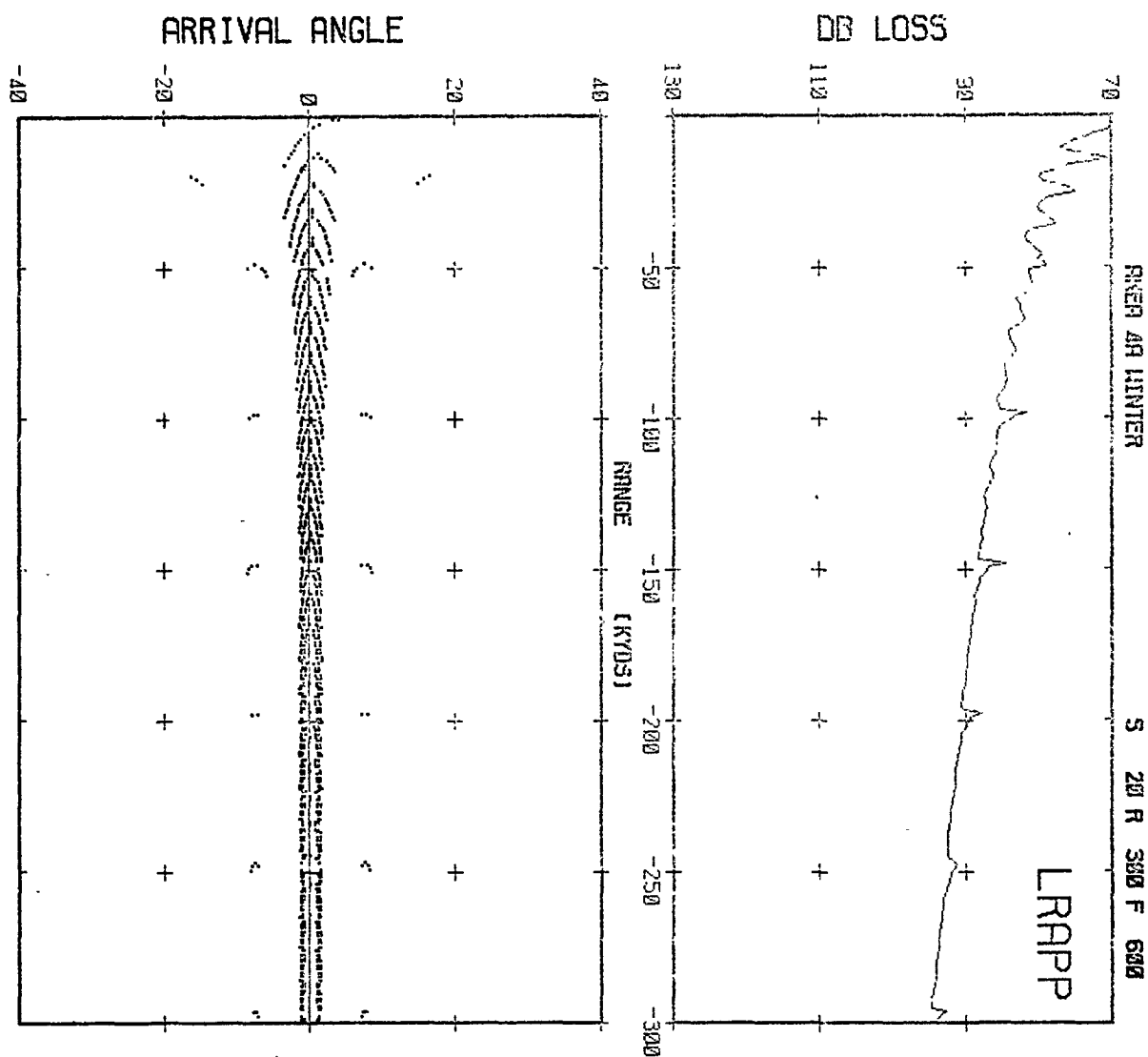


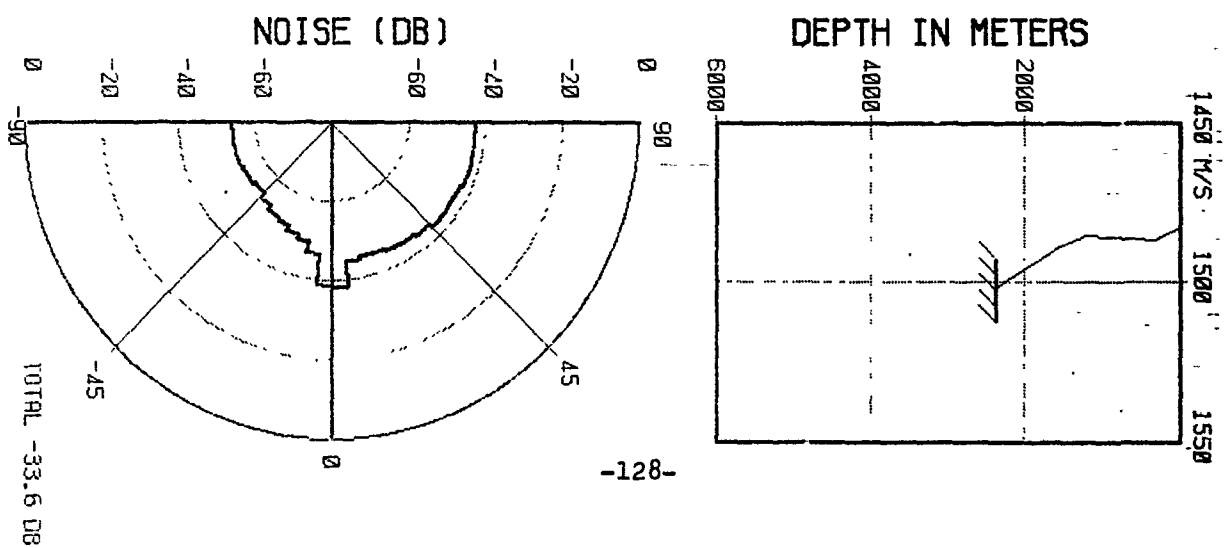
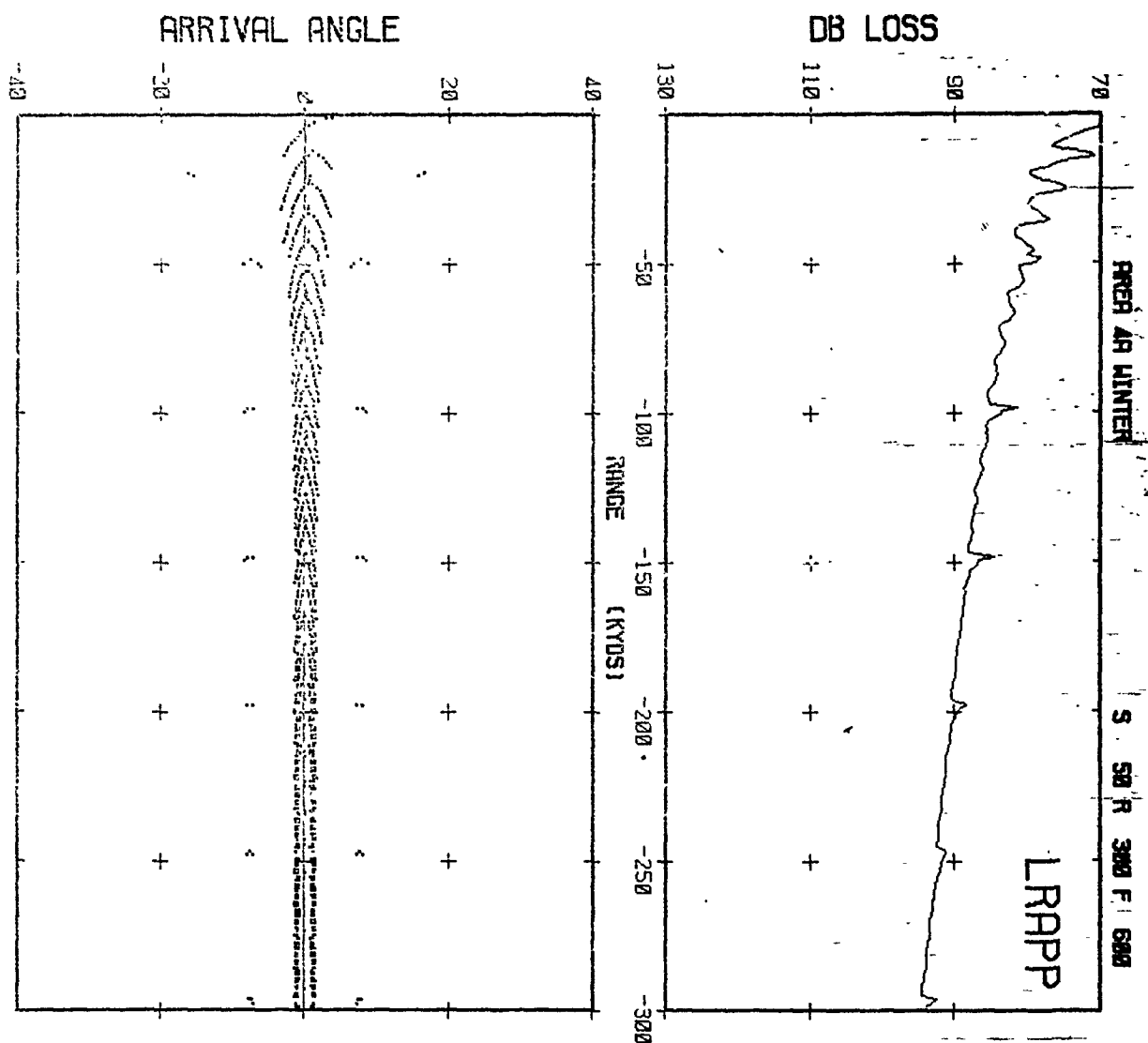
DEPTH IN METERS

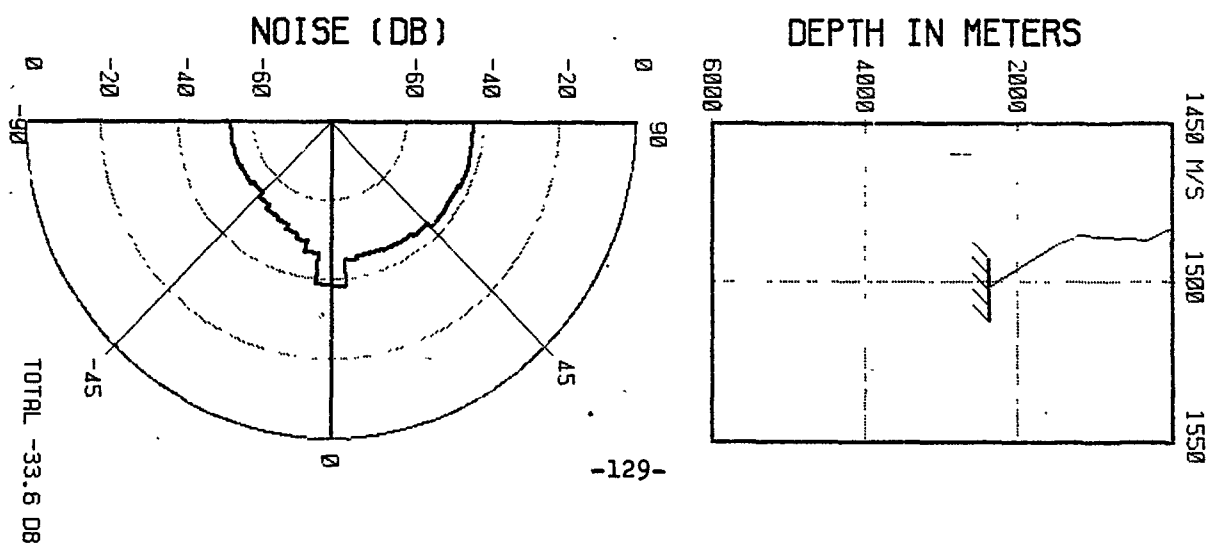
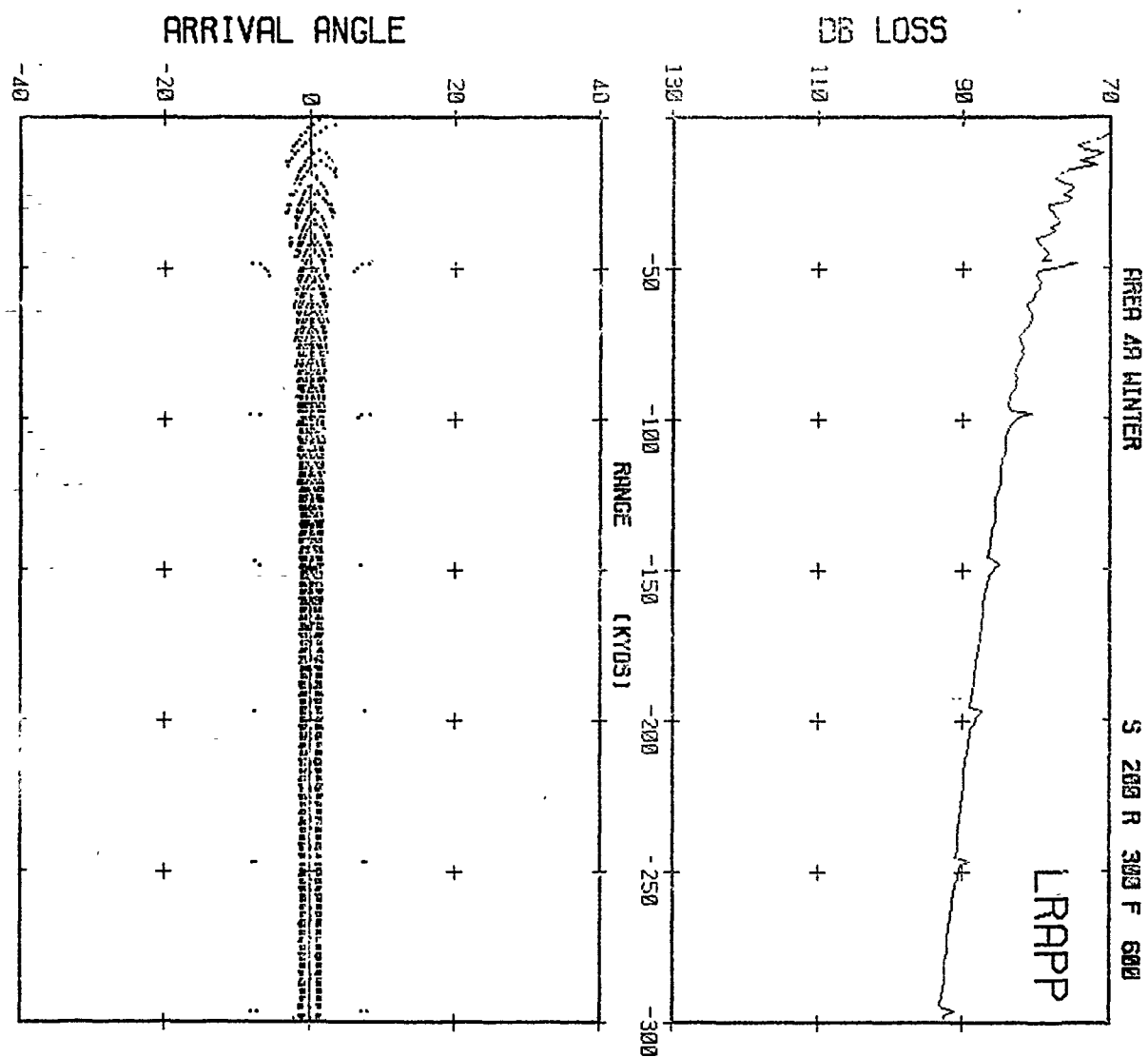


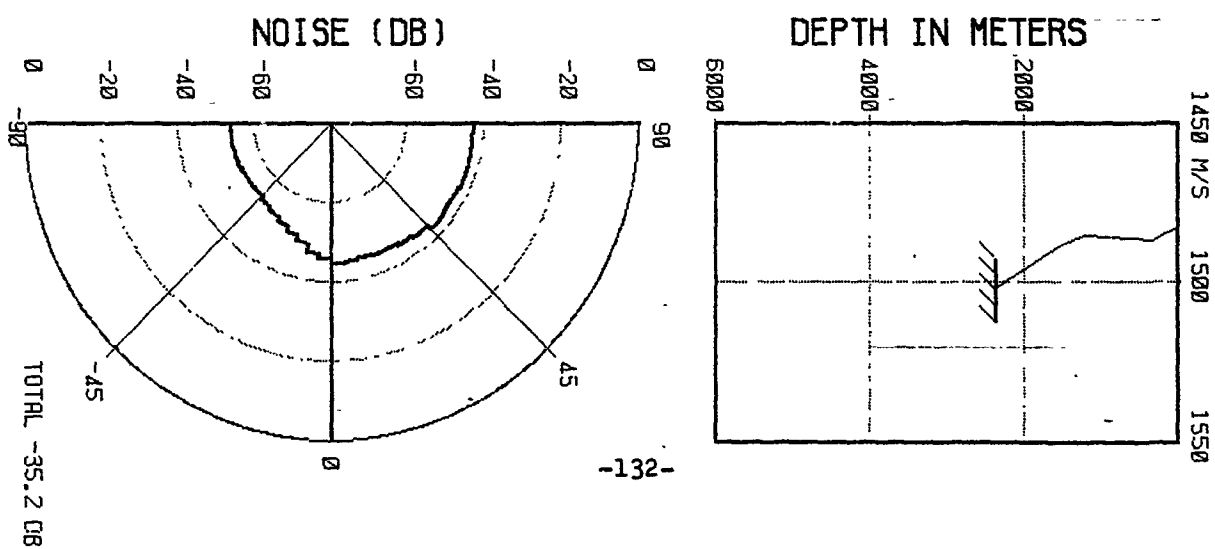
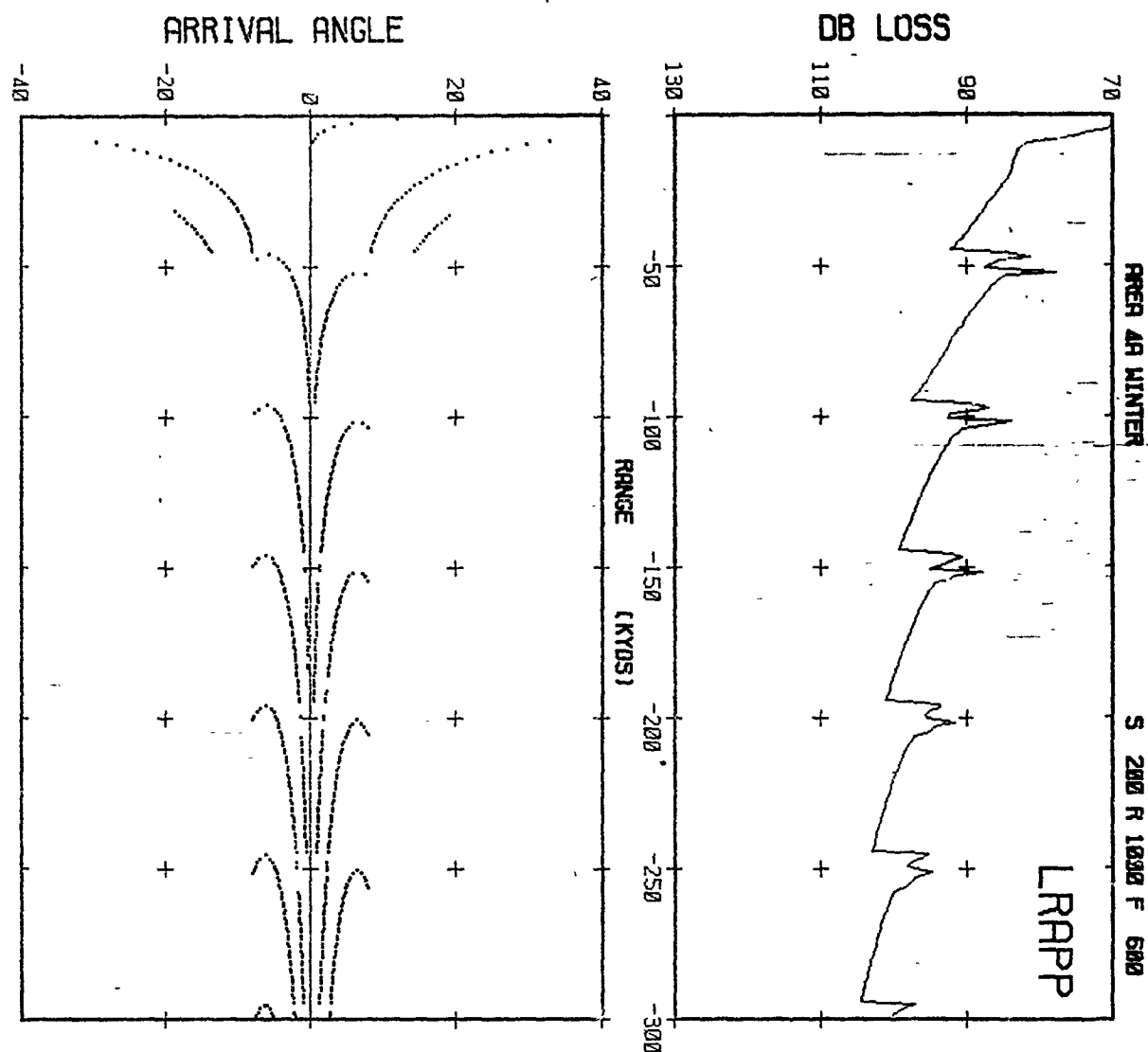
NOISE (DB)









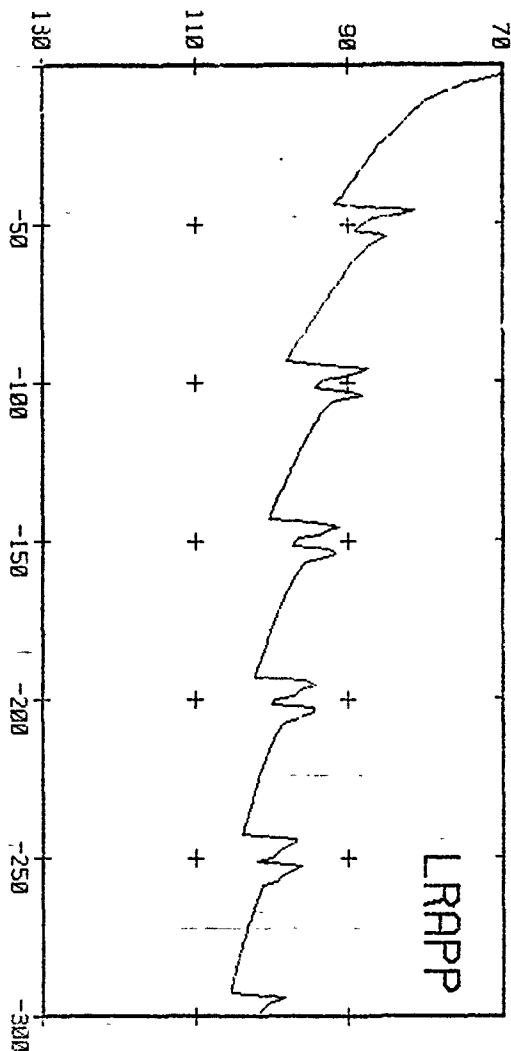


AREA 4R MINIER

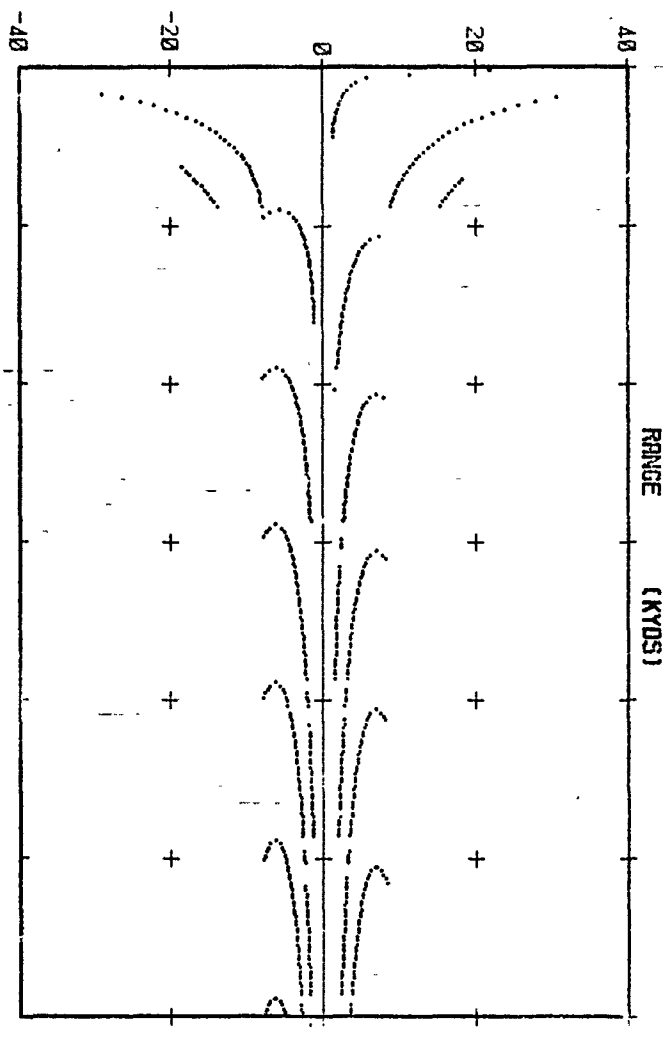
S 20 R 1500 F 600

1450 M/S 1500 1550

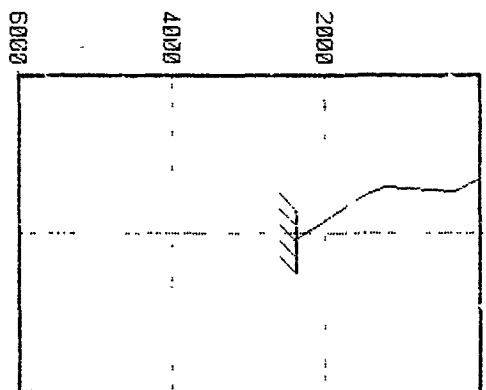
DB LOSS



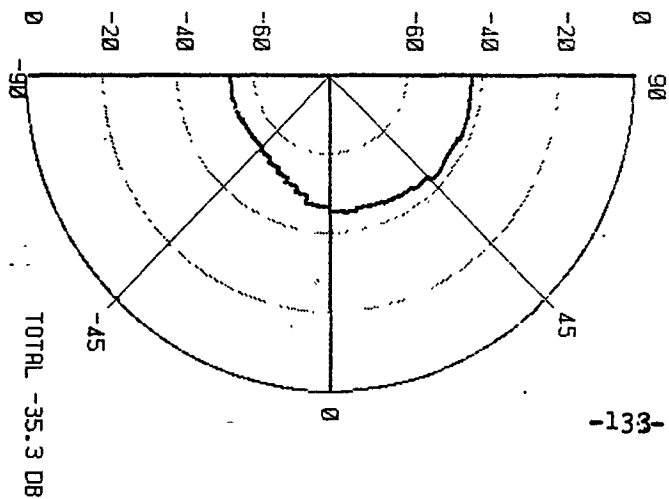
ARRIVAL ANGLE



DEPTH IN METERS

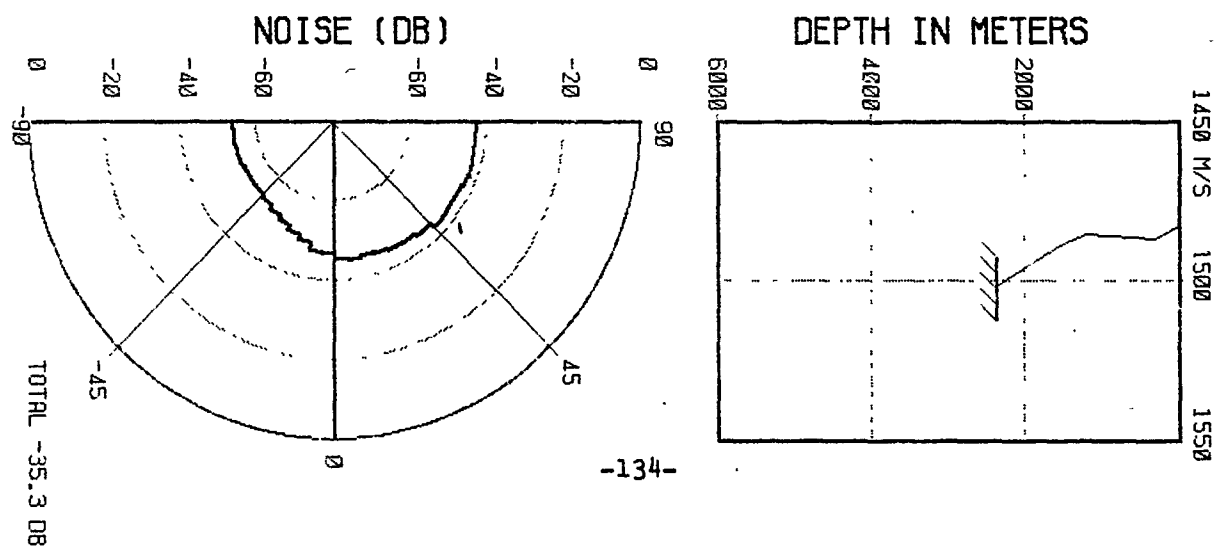
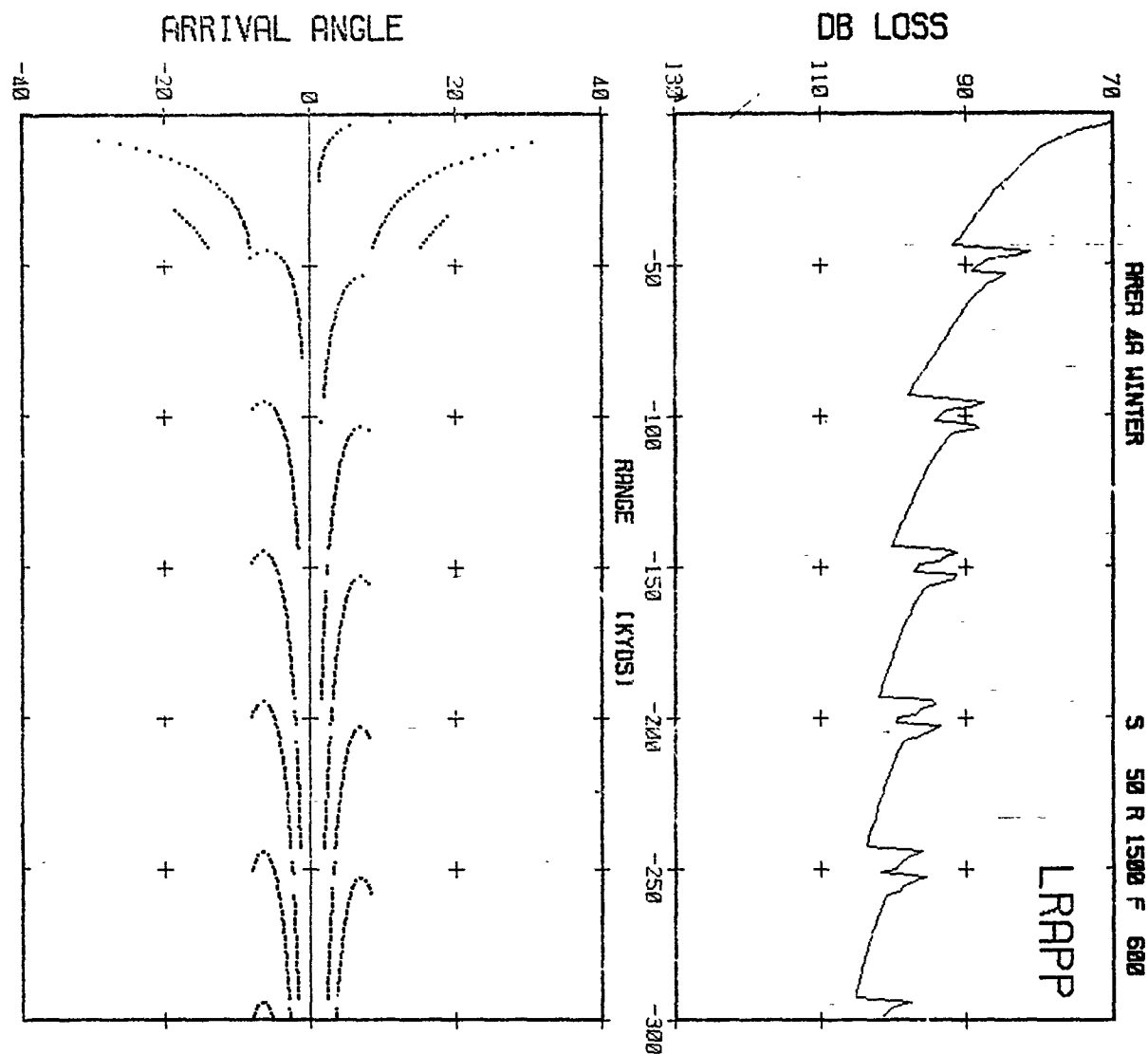


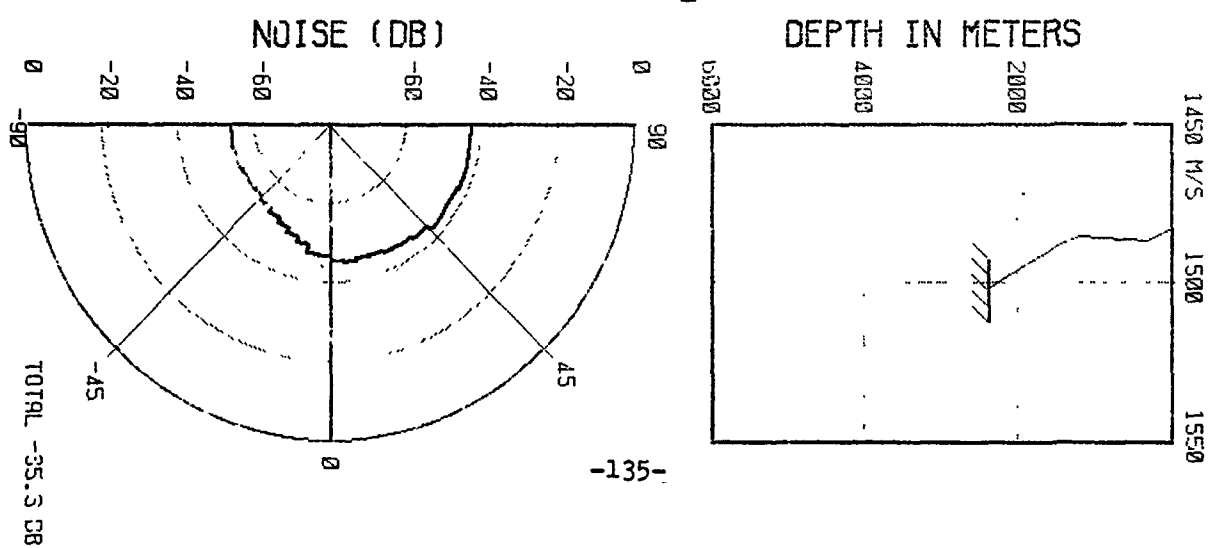
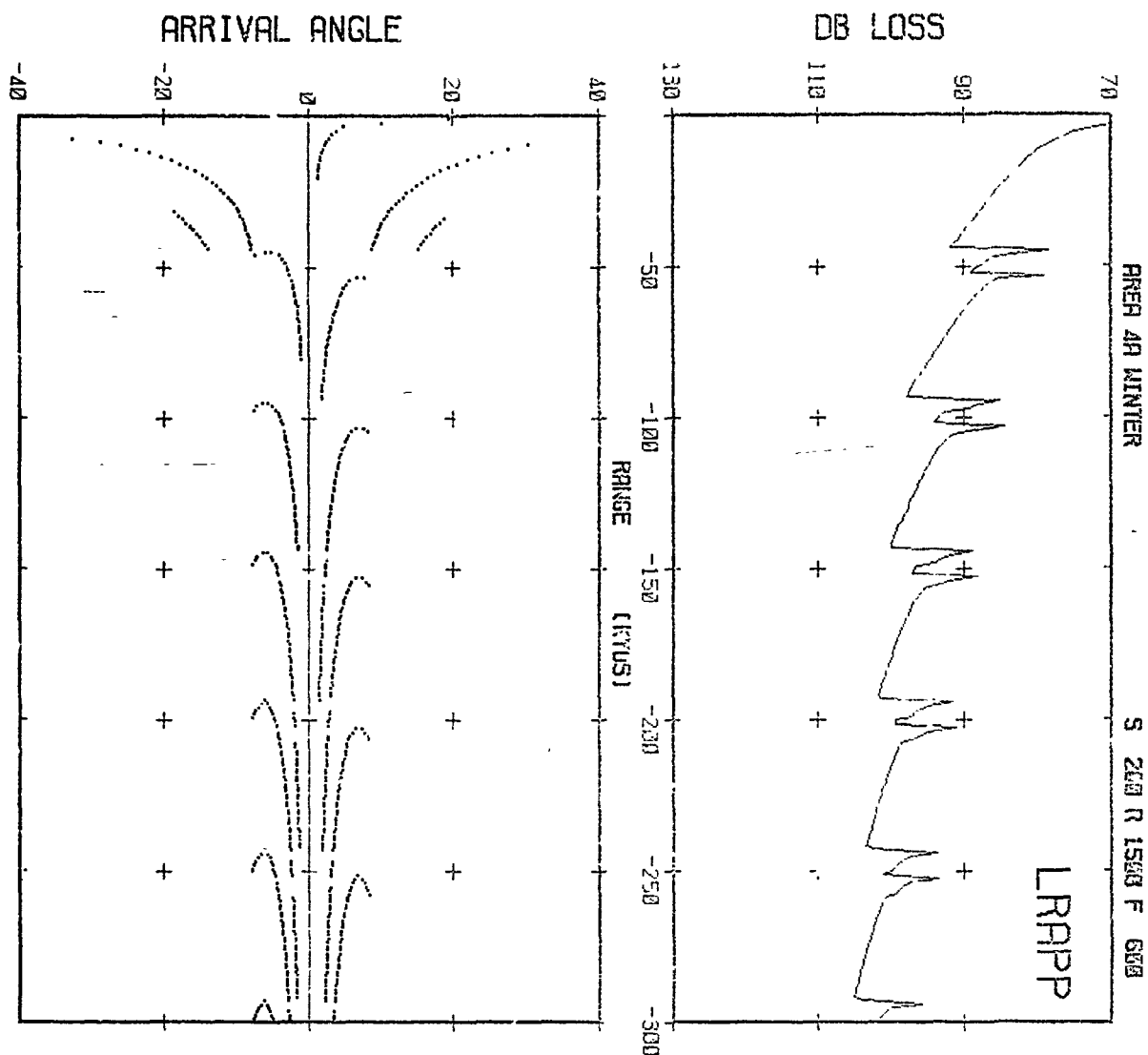
NOISE (DB)

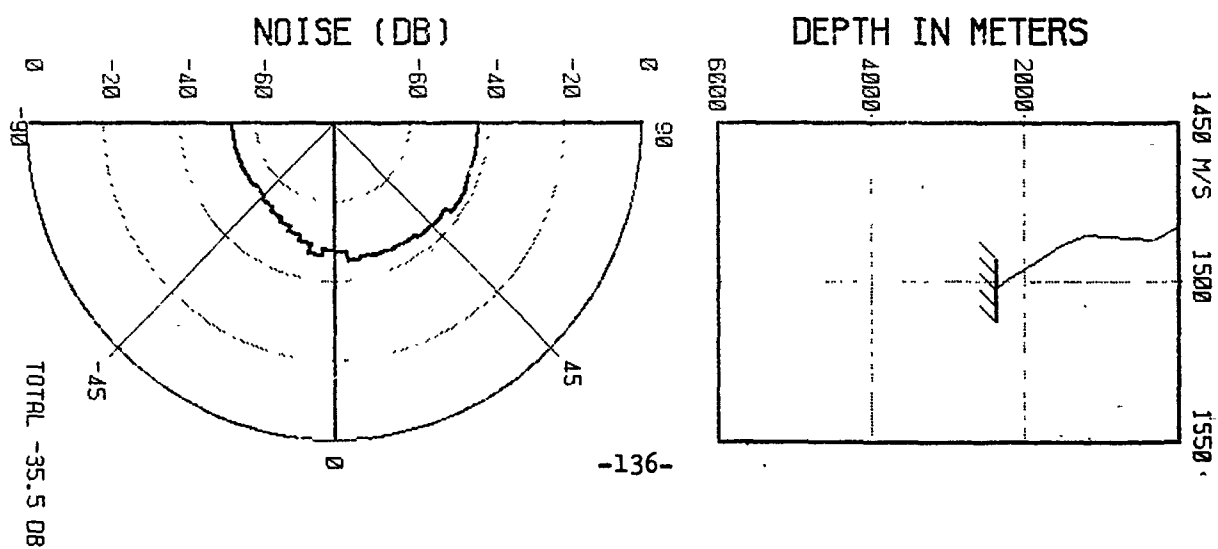
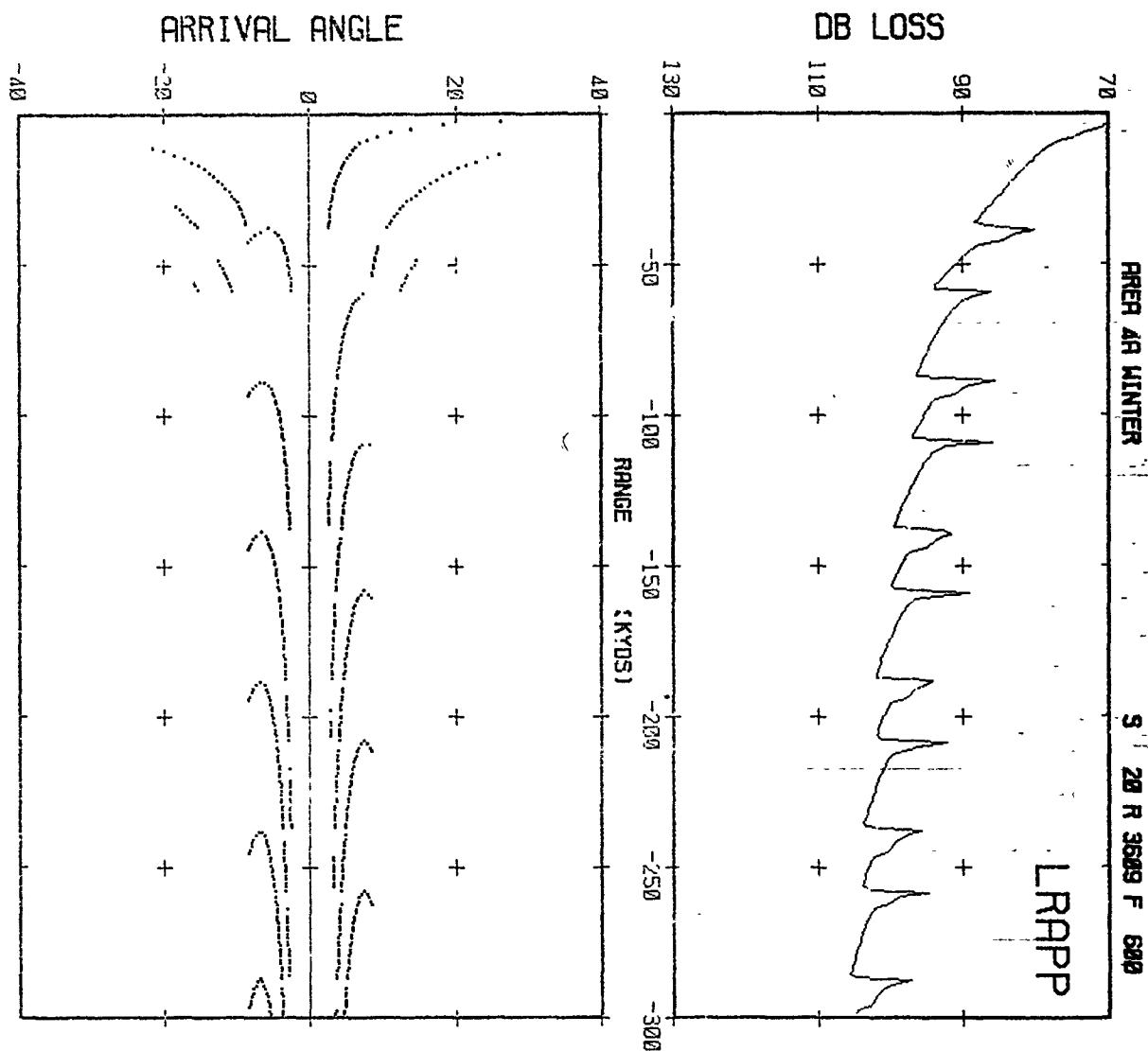


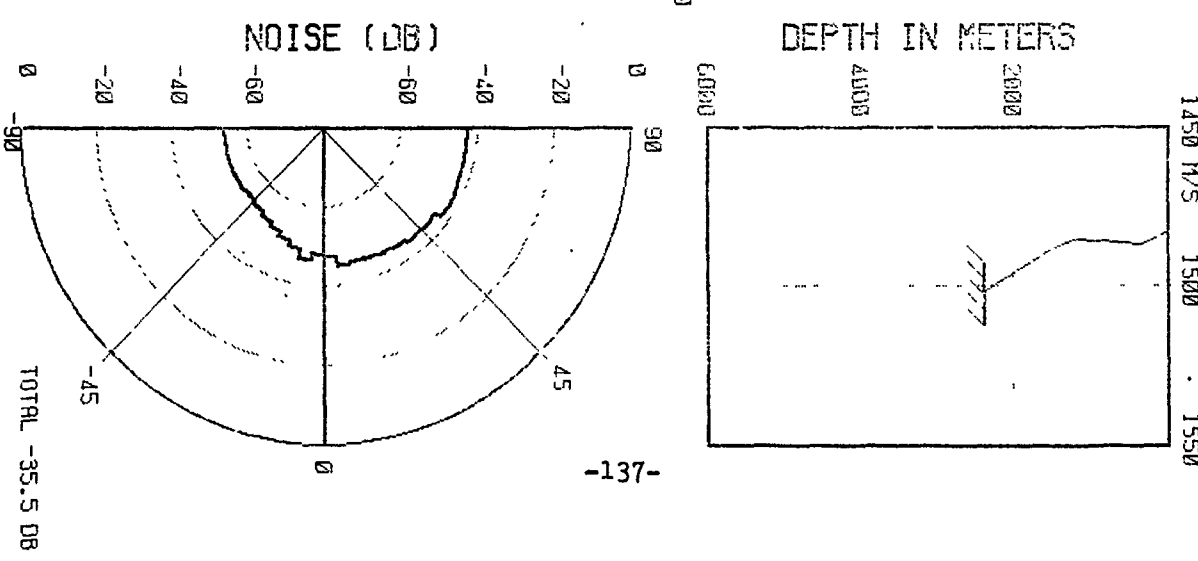
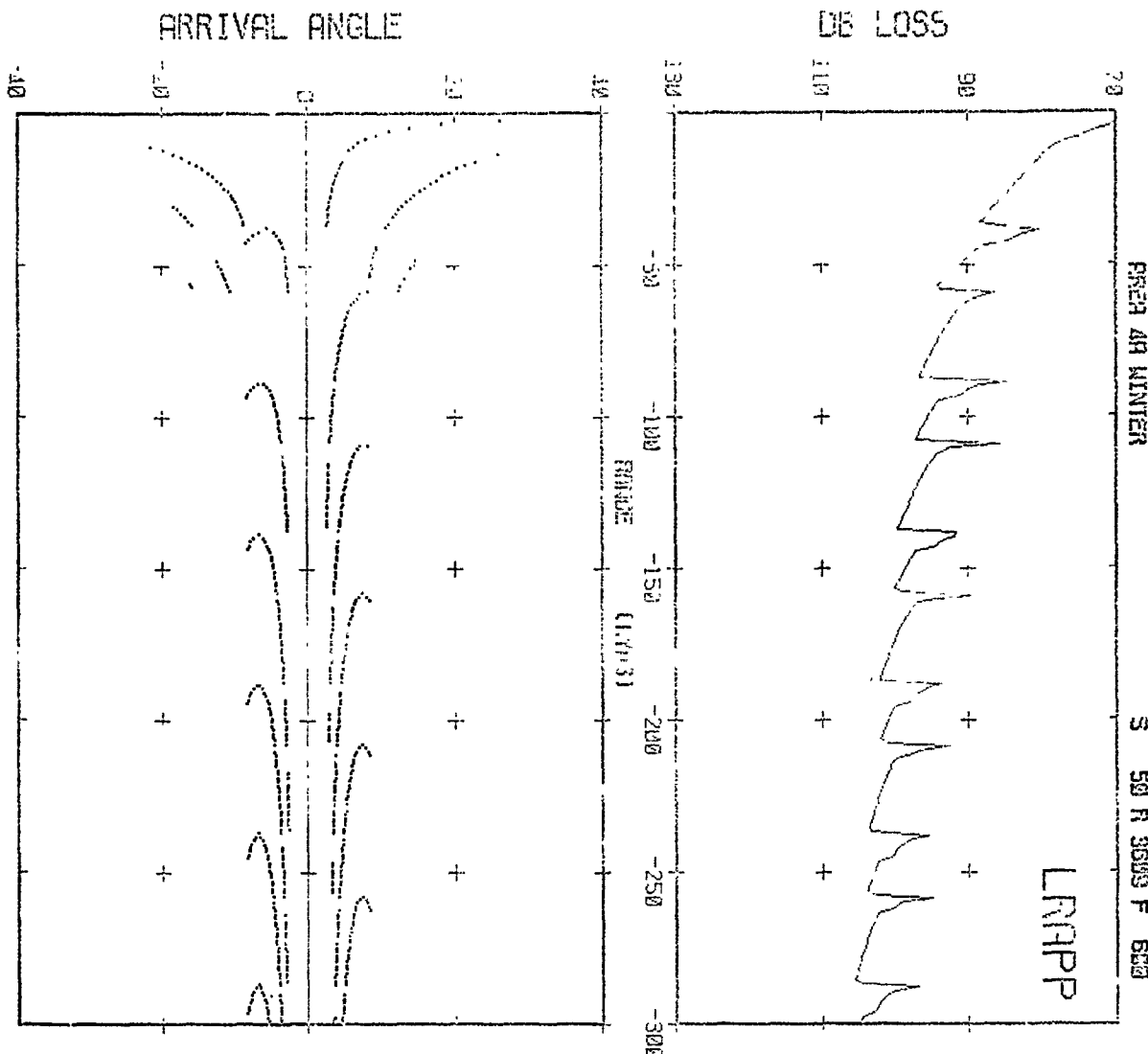
-133-

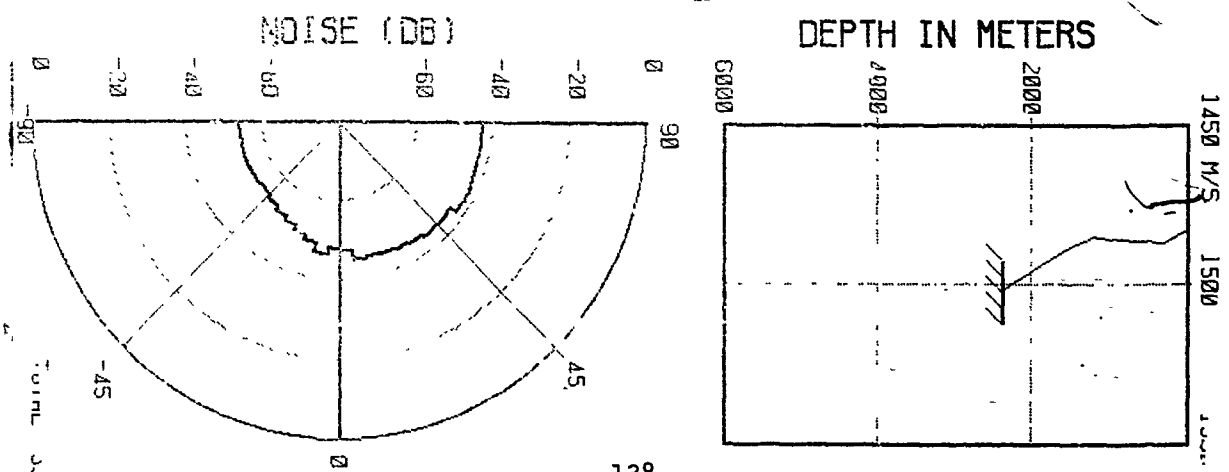
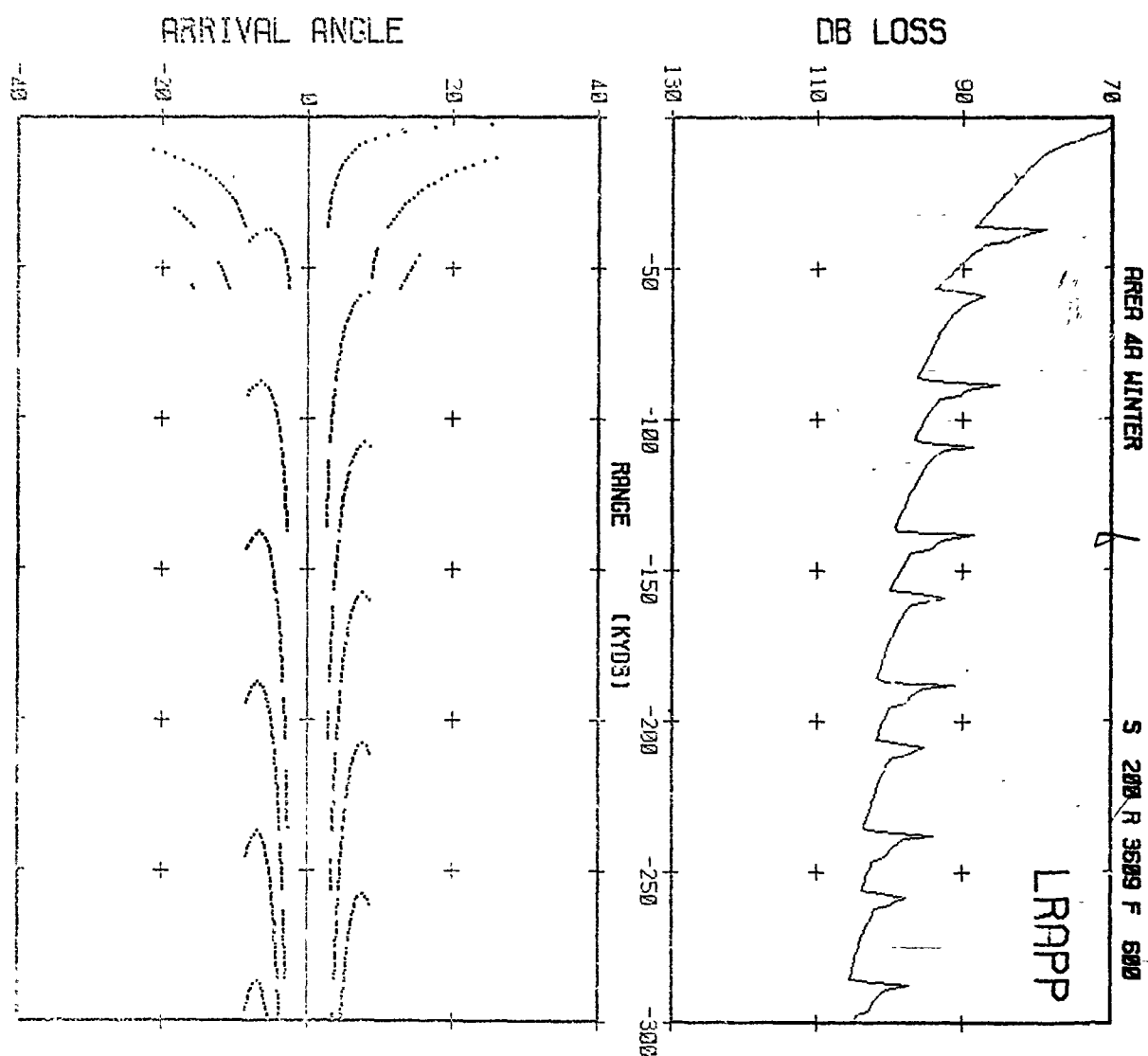
TOTAL -35.3 DB







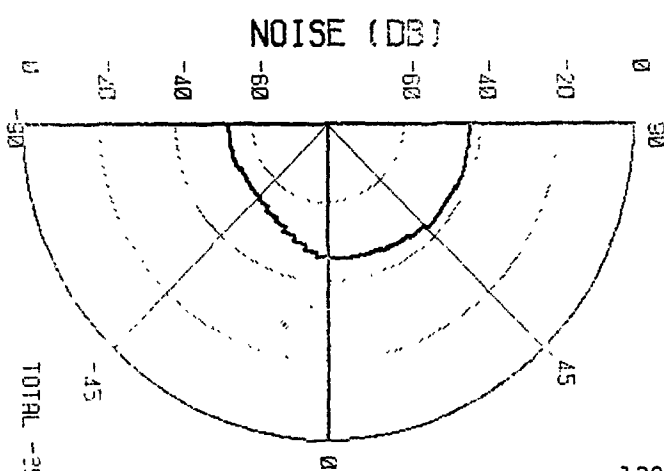
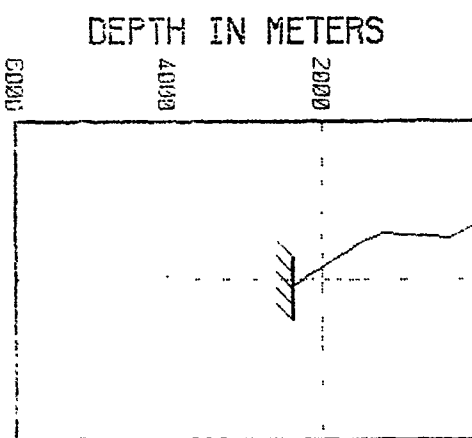
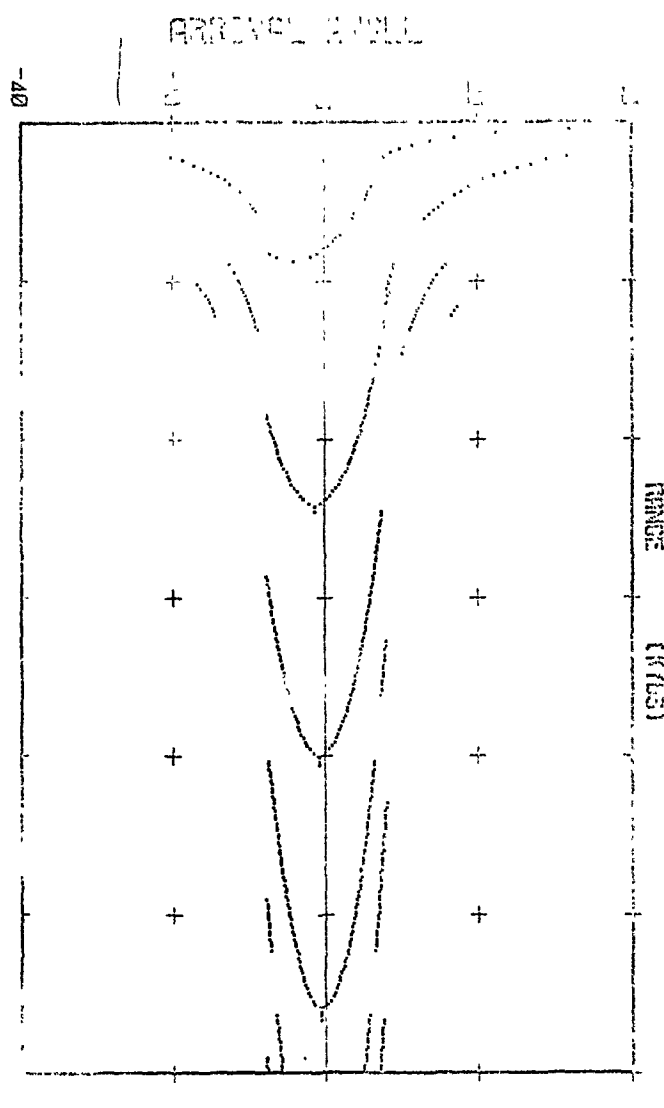
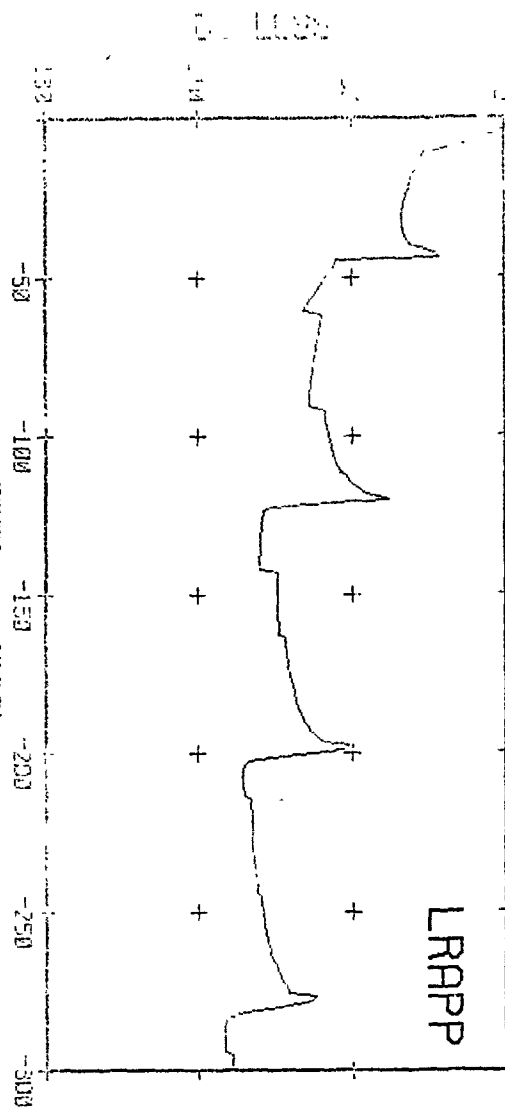


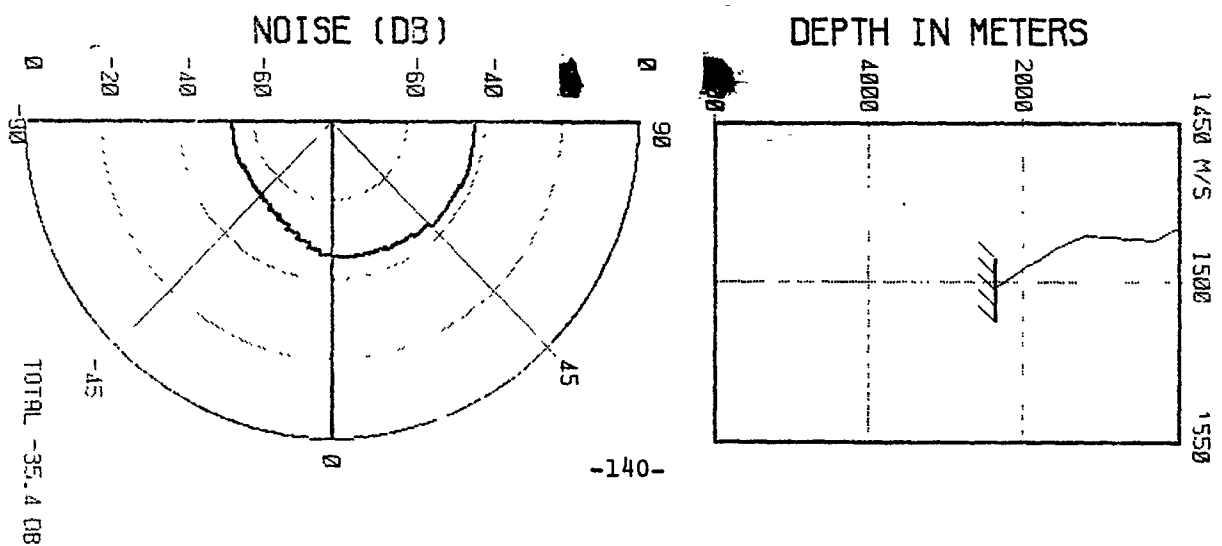
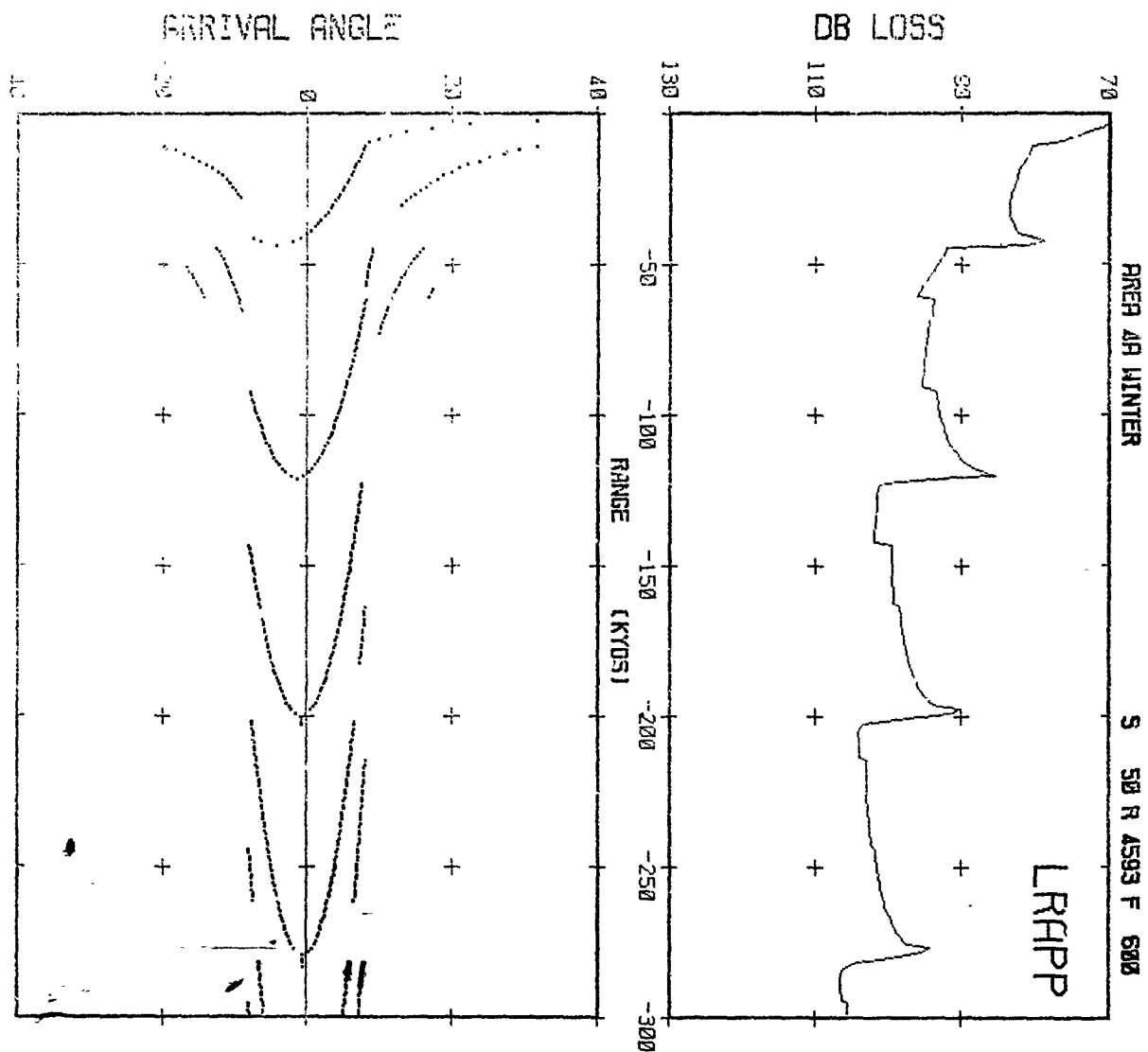


AREA AIR WINTER

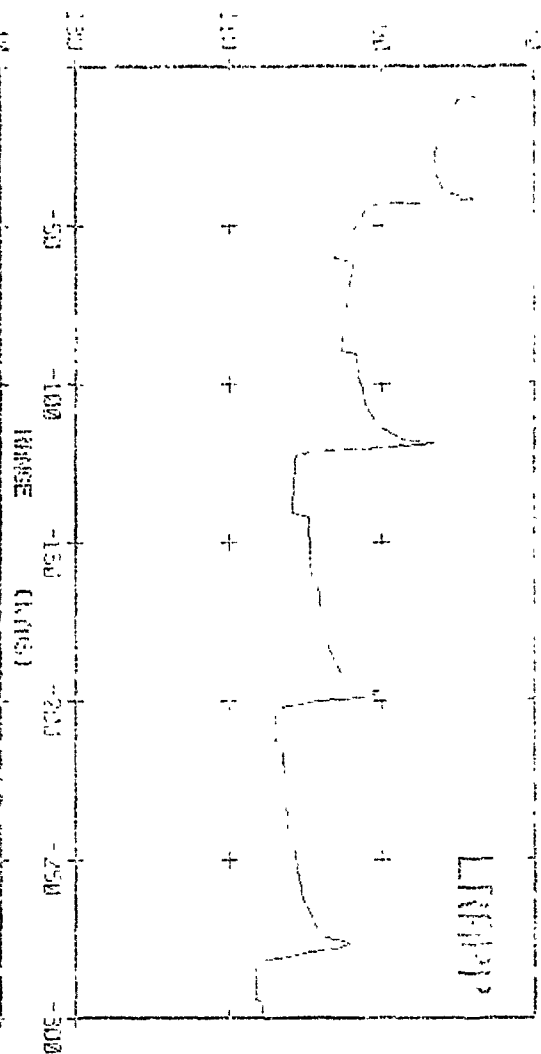
S 20 R 4503 F 600

1450 M/S 1500 1550

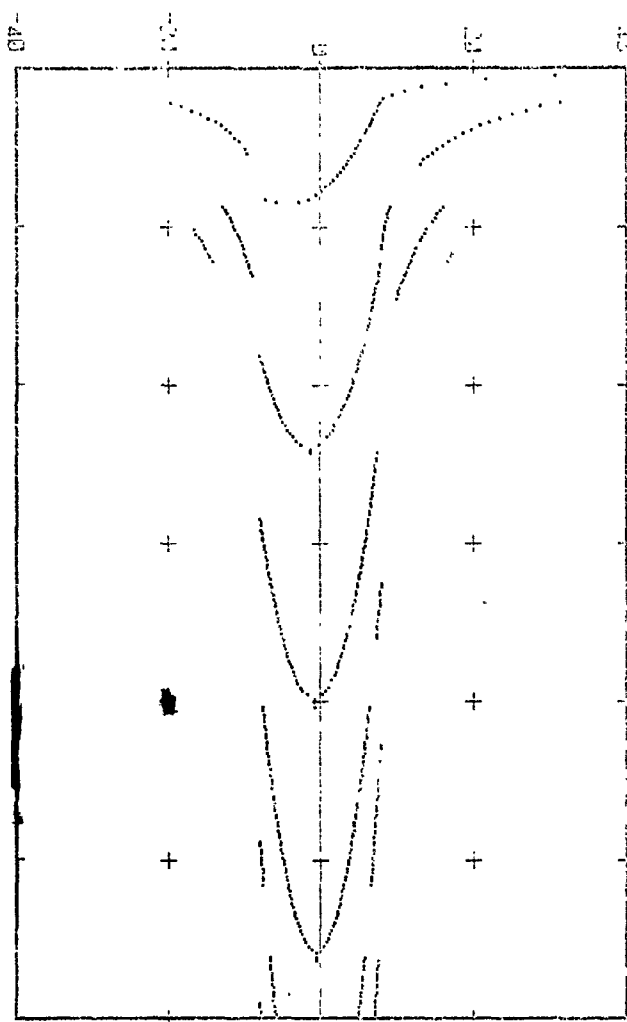




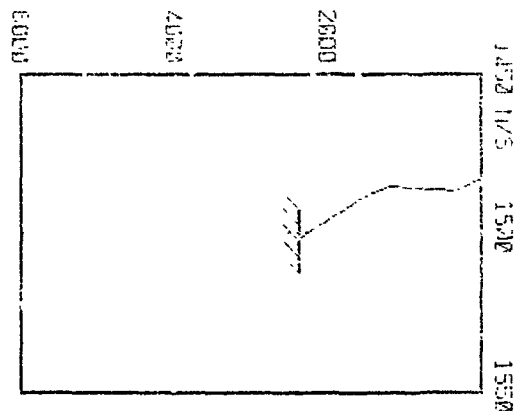
LOSS



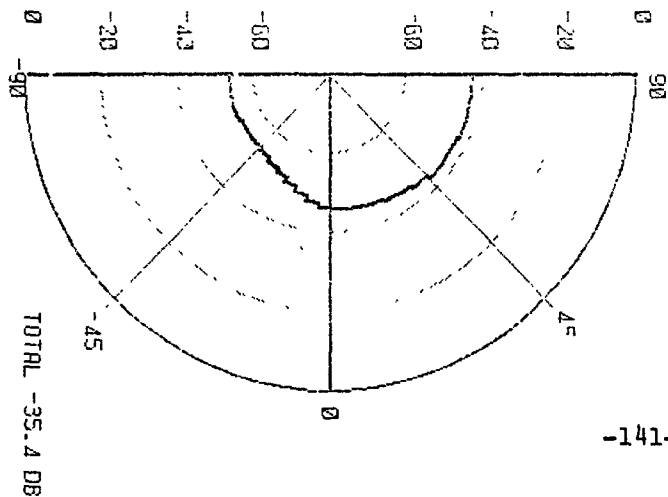
ARRIVAL ANGLE

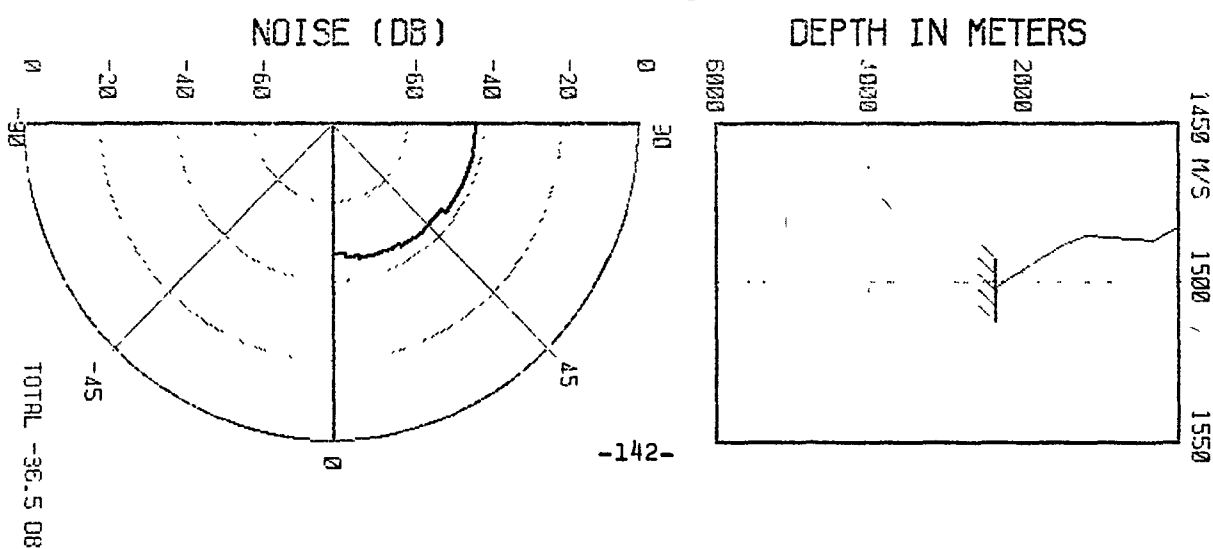
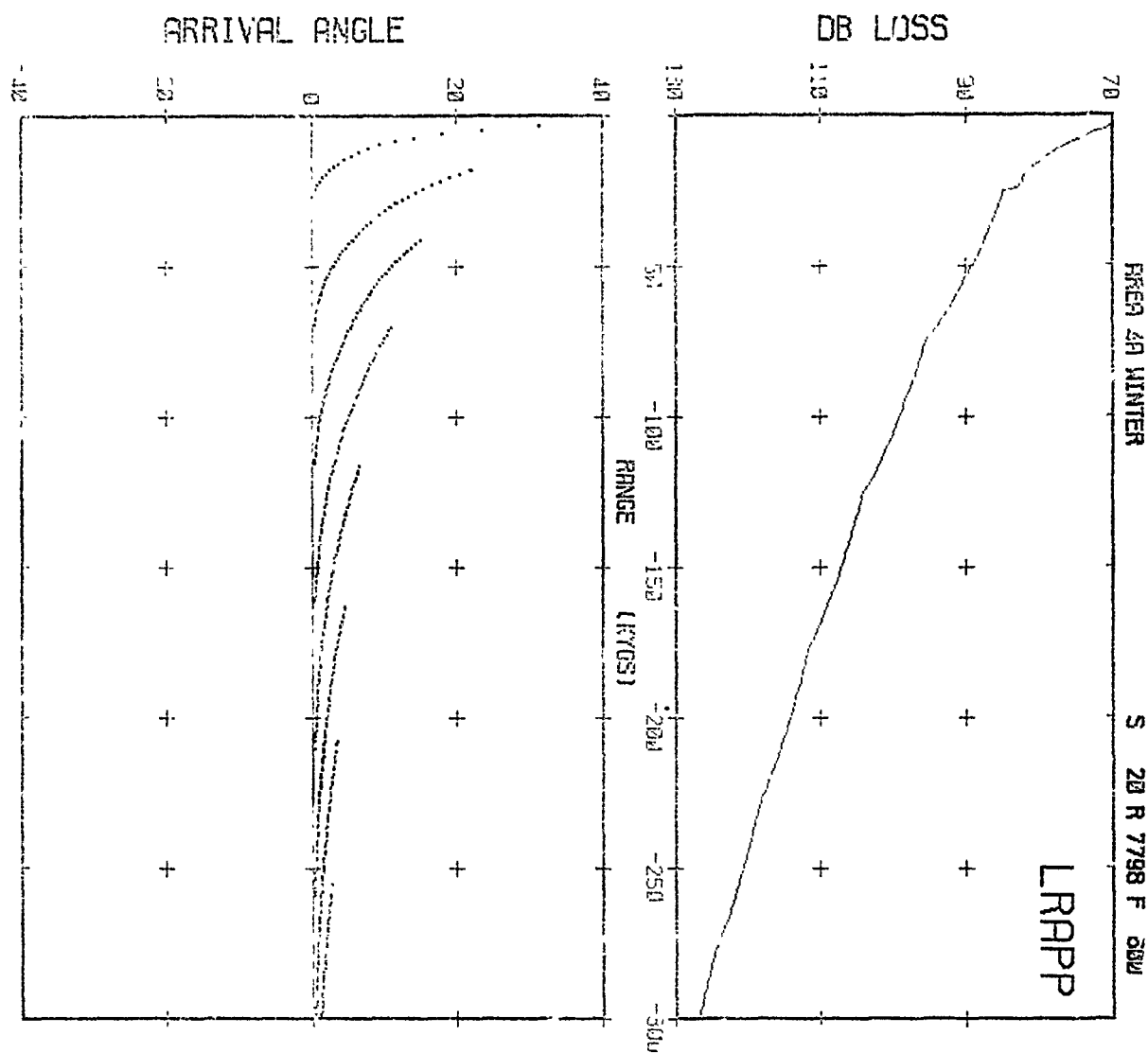


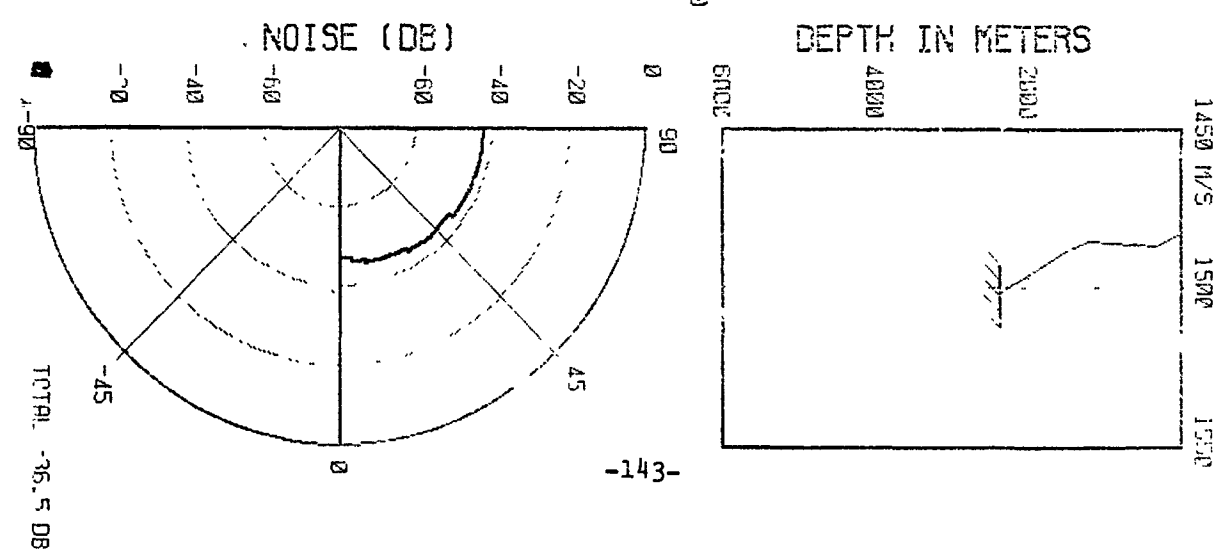
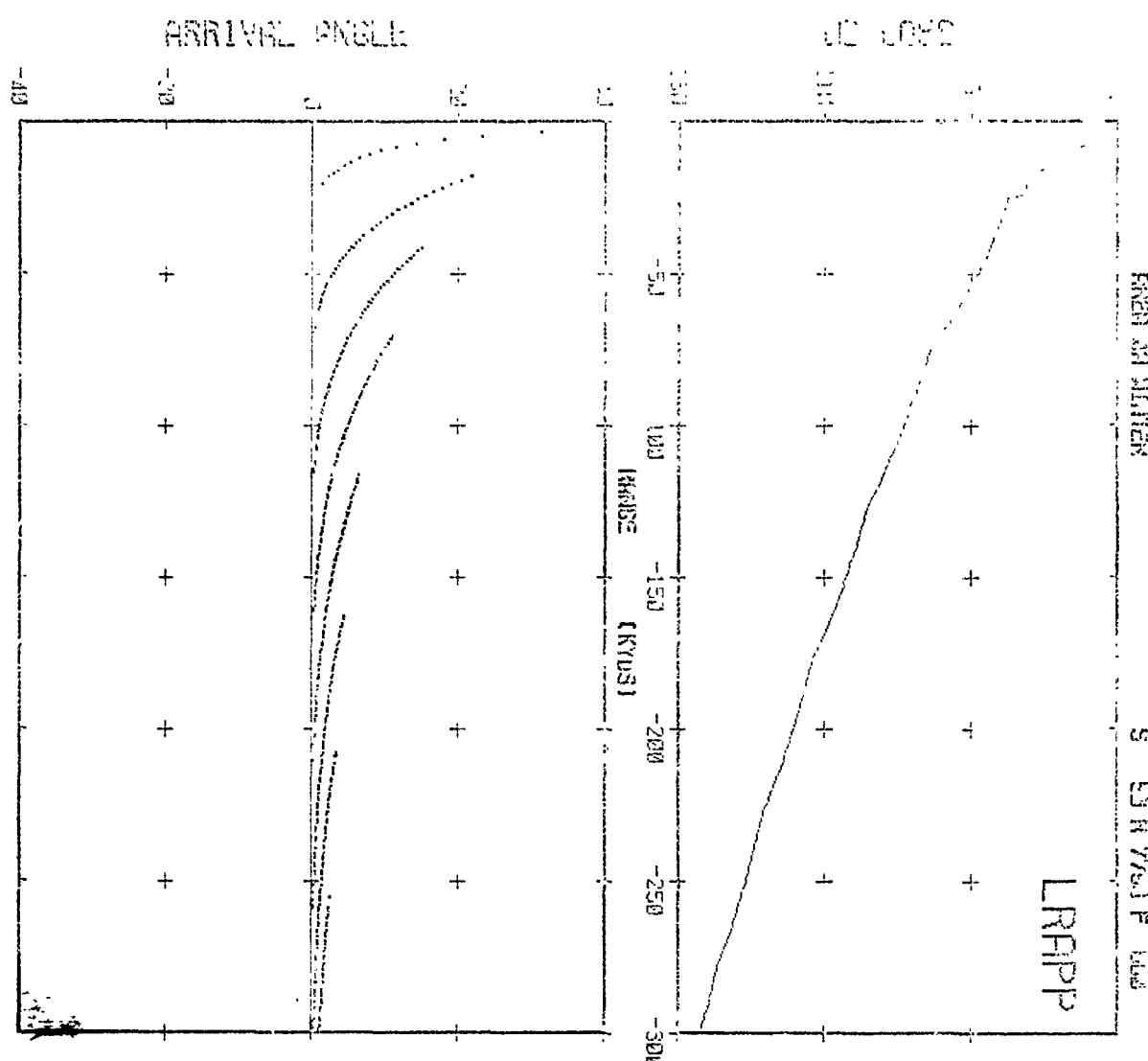
DEPTH IN METERS

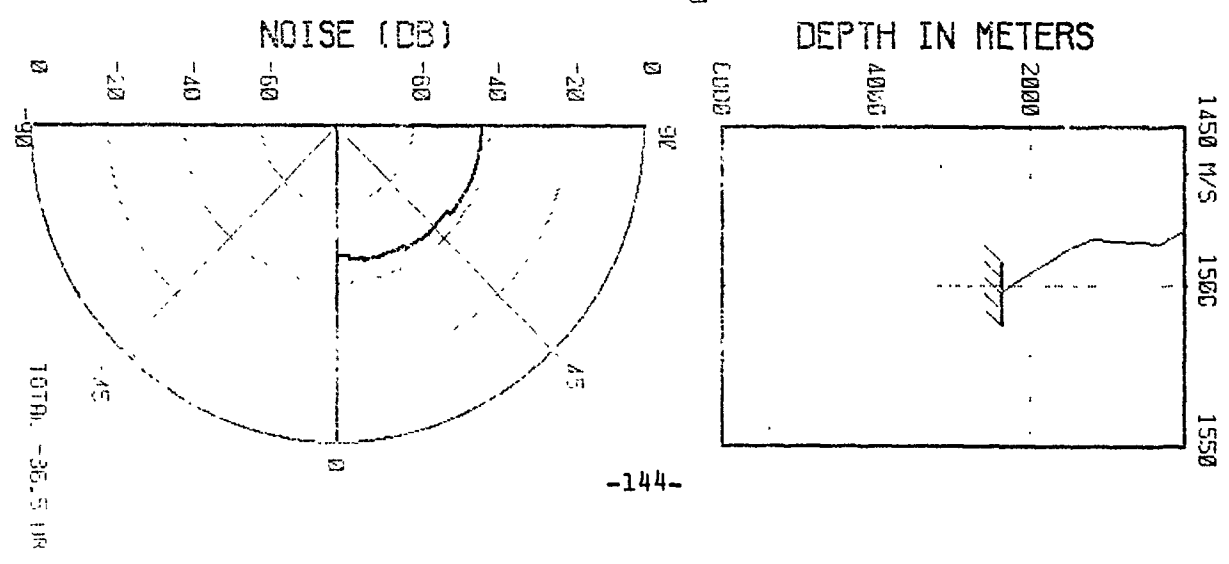
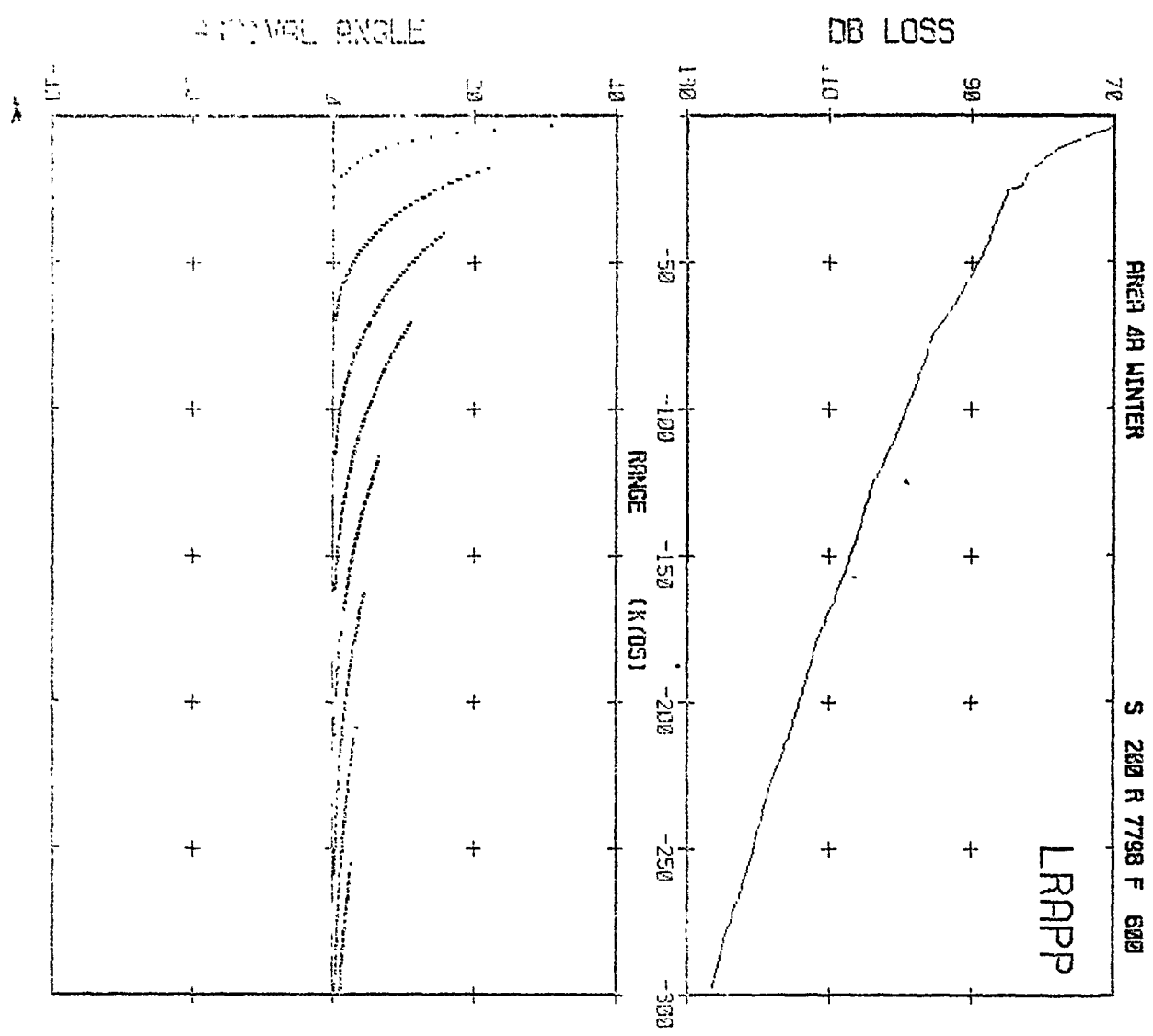


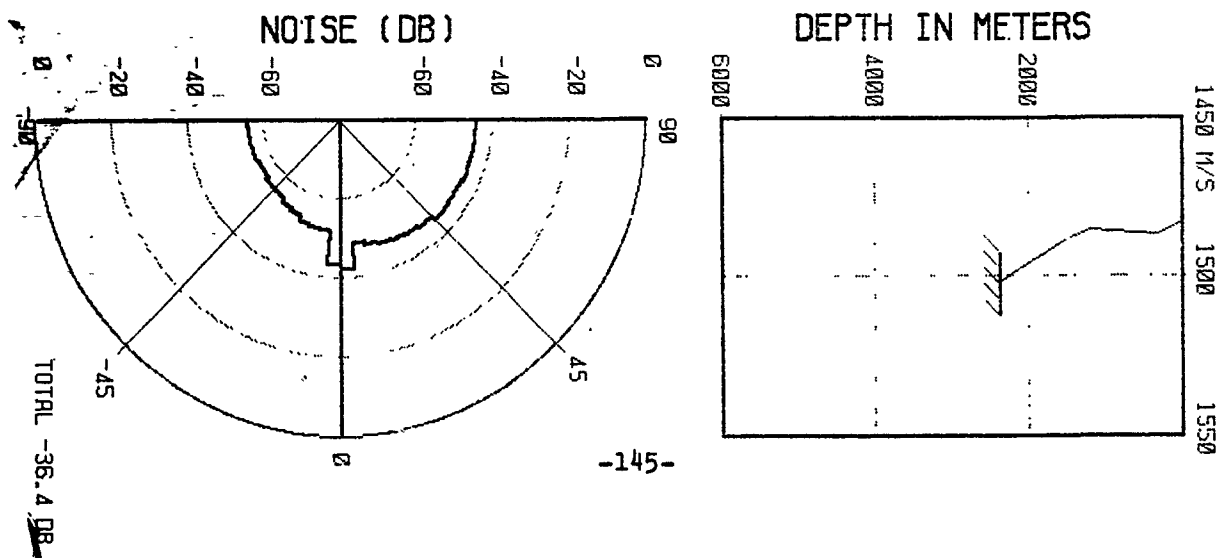
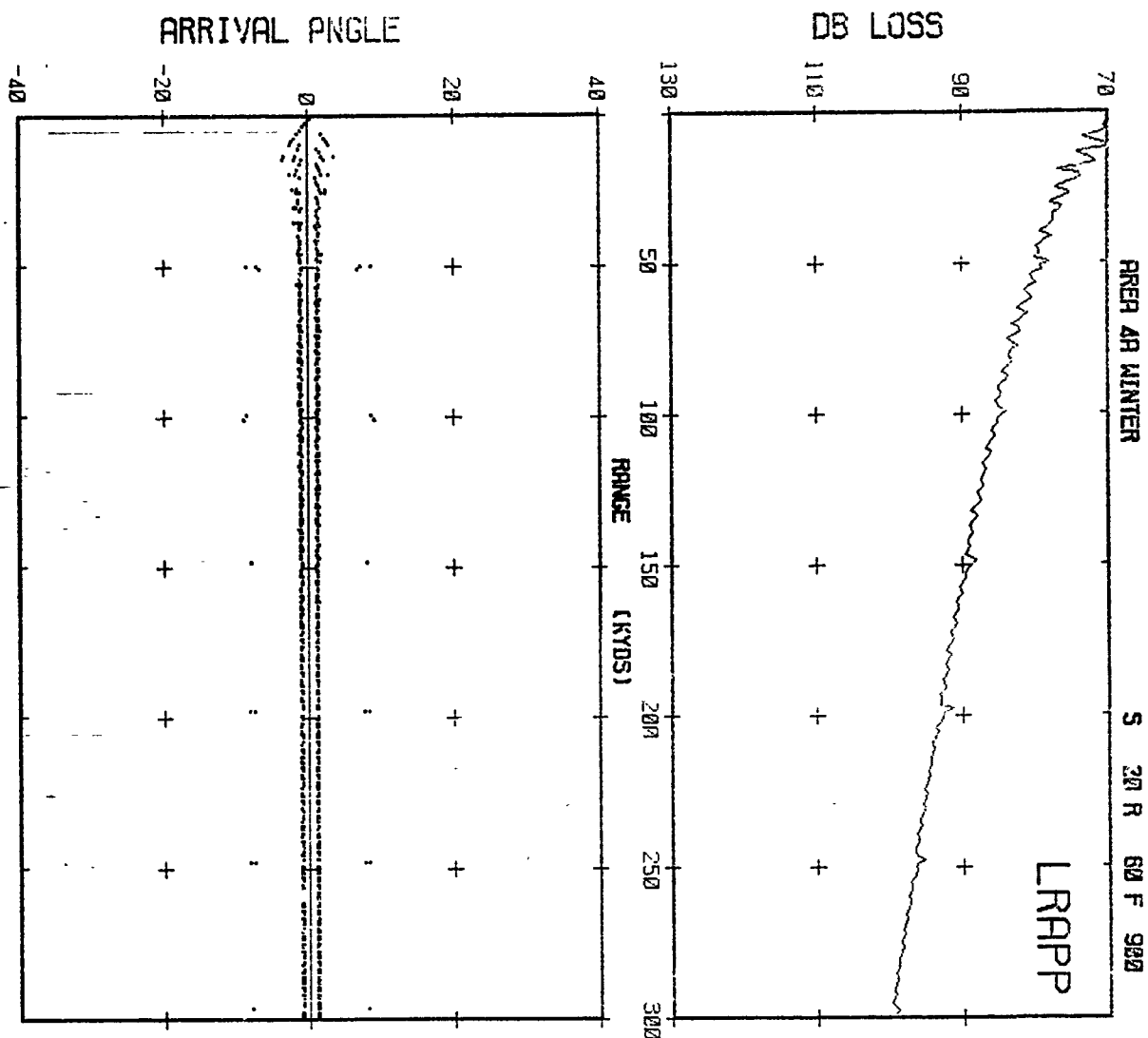
NOISE (DB)

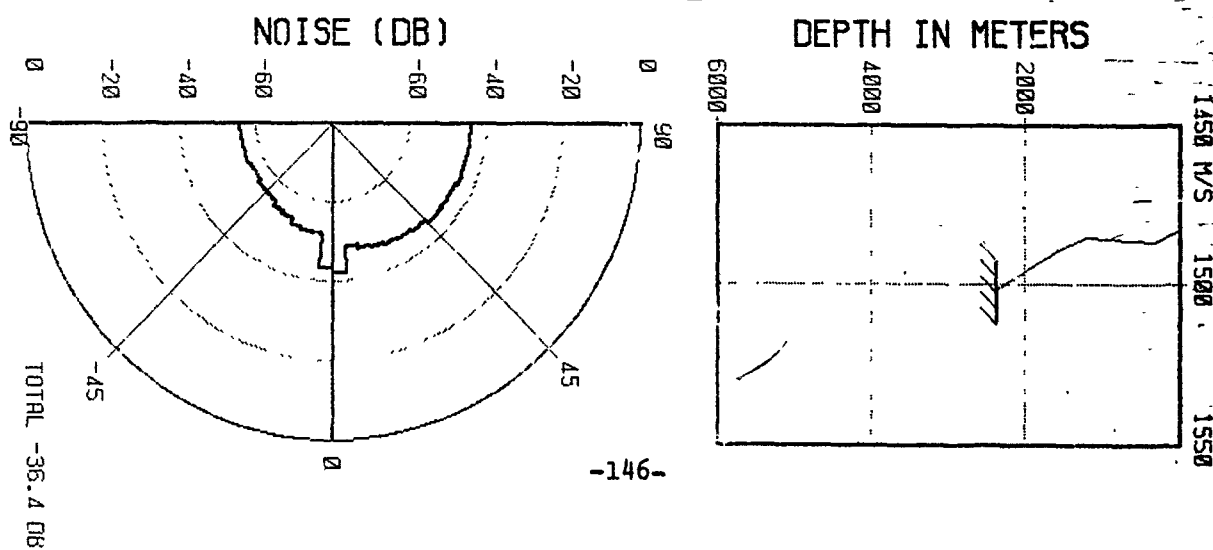
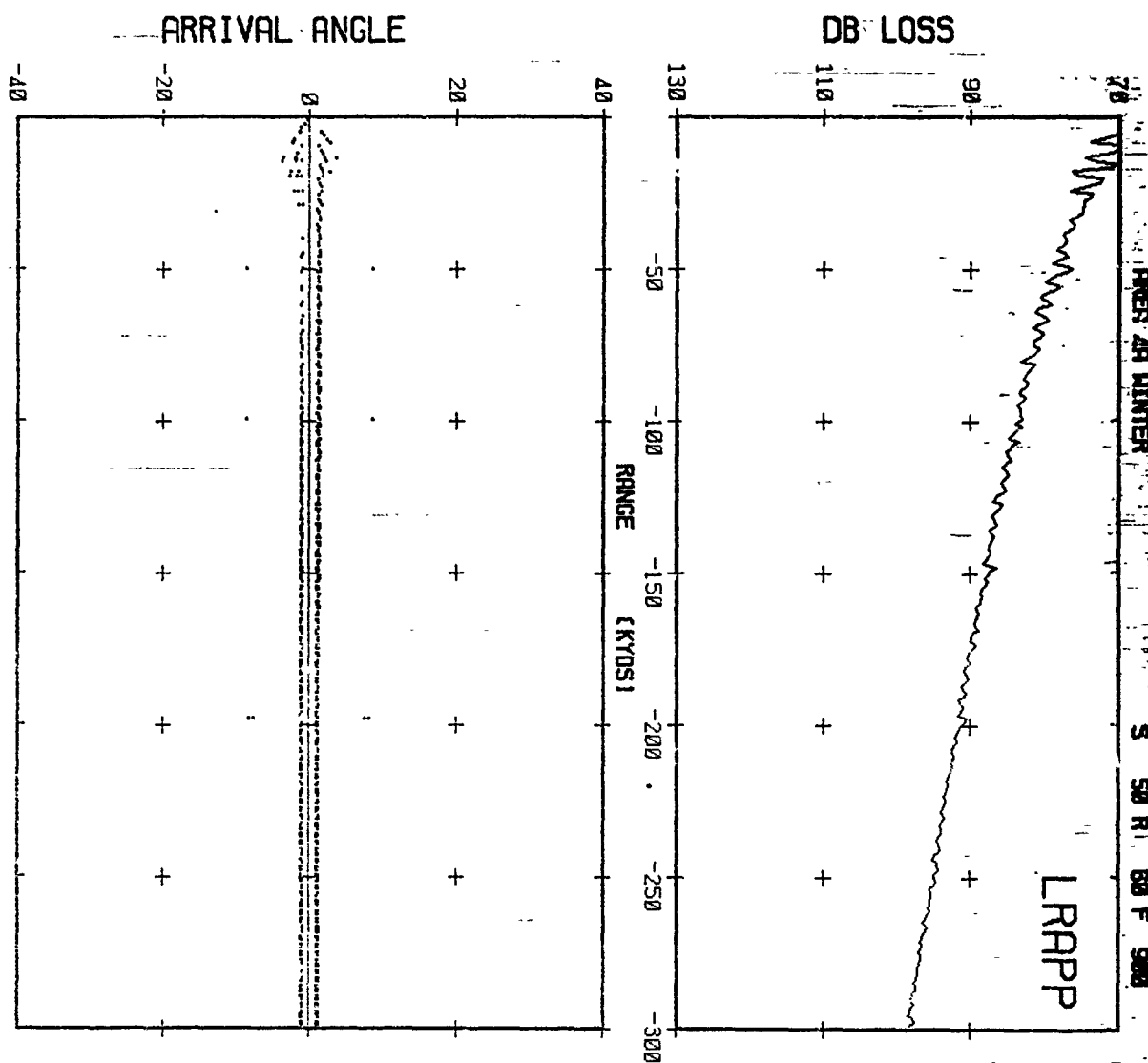


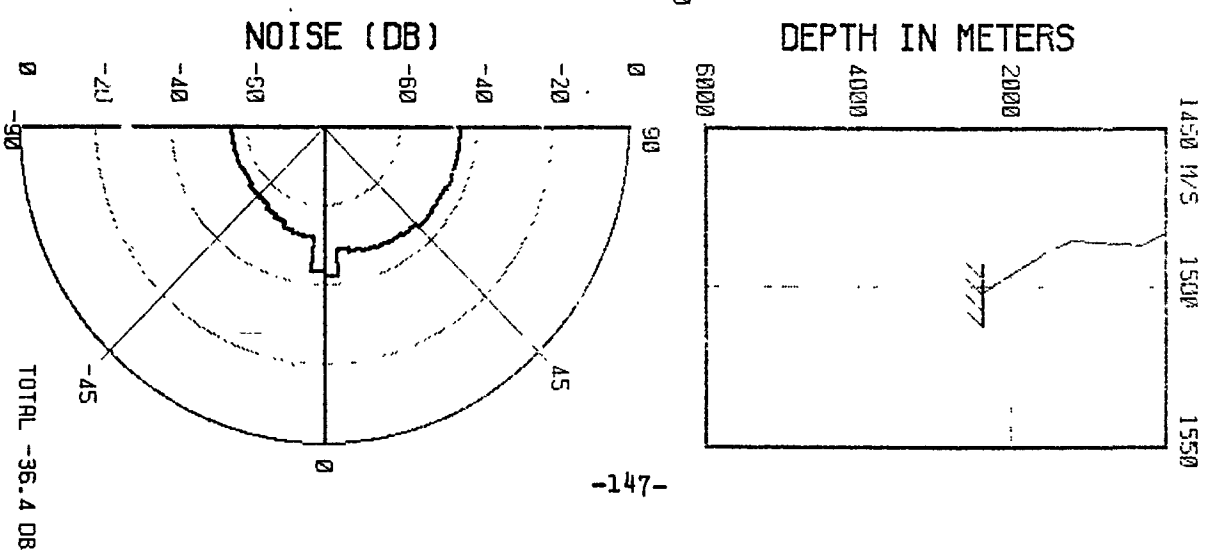
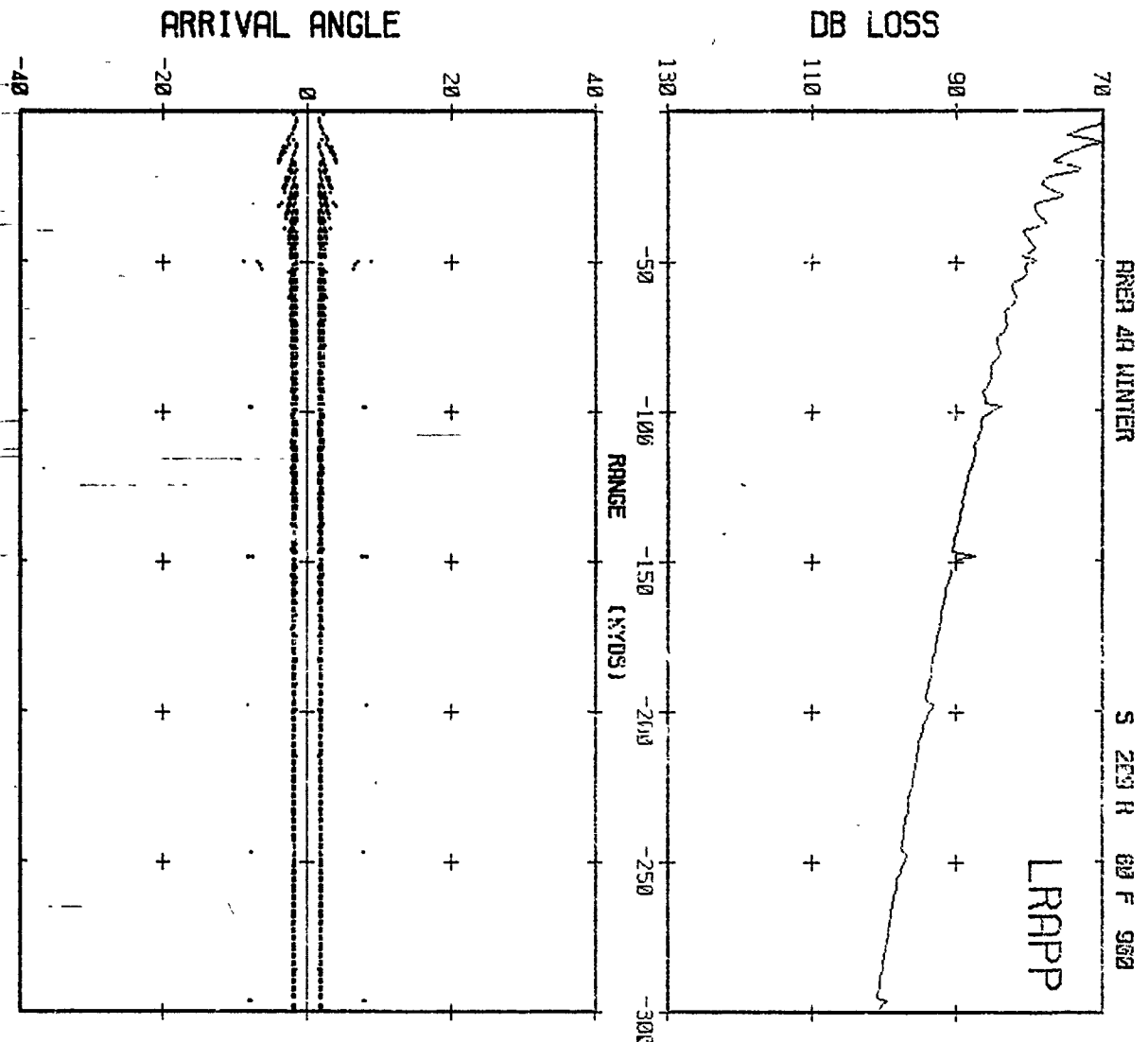


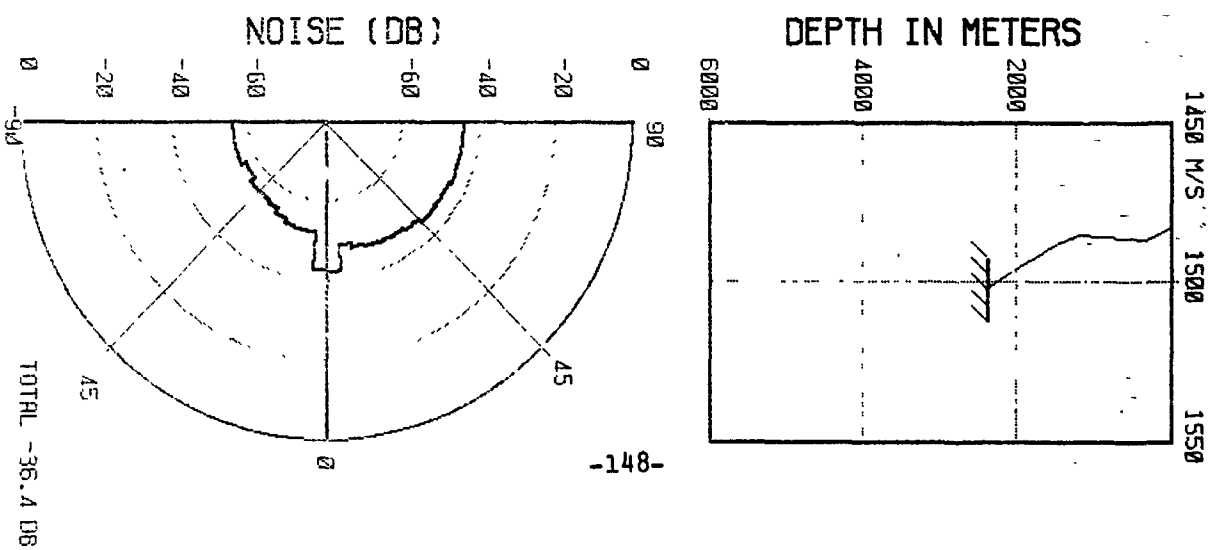
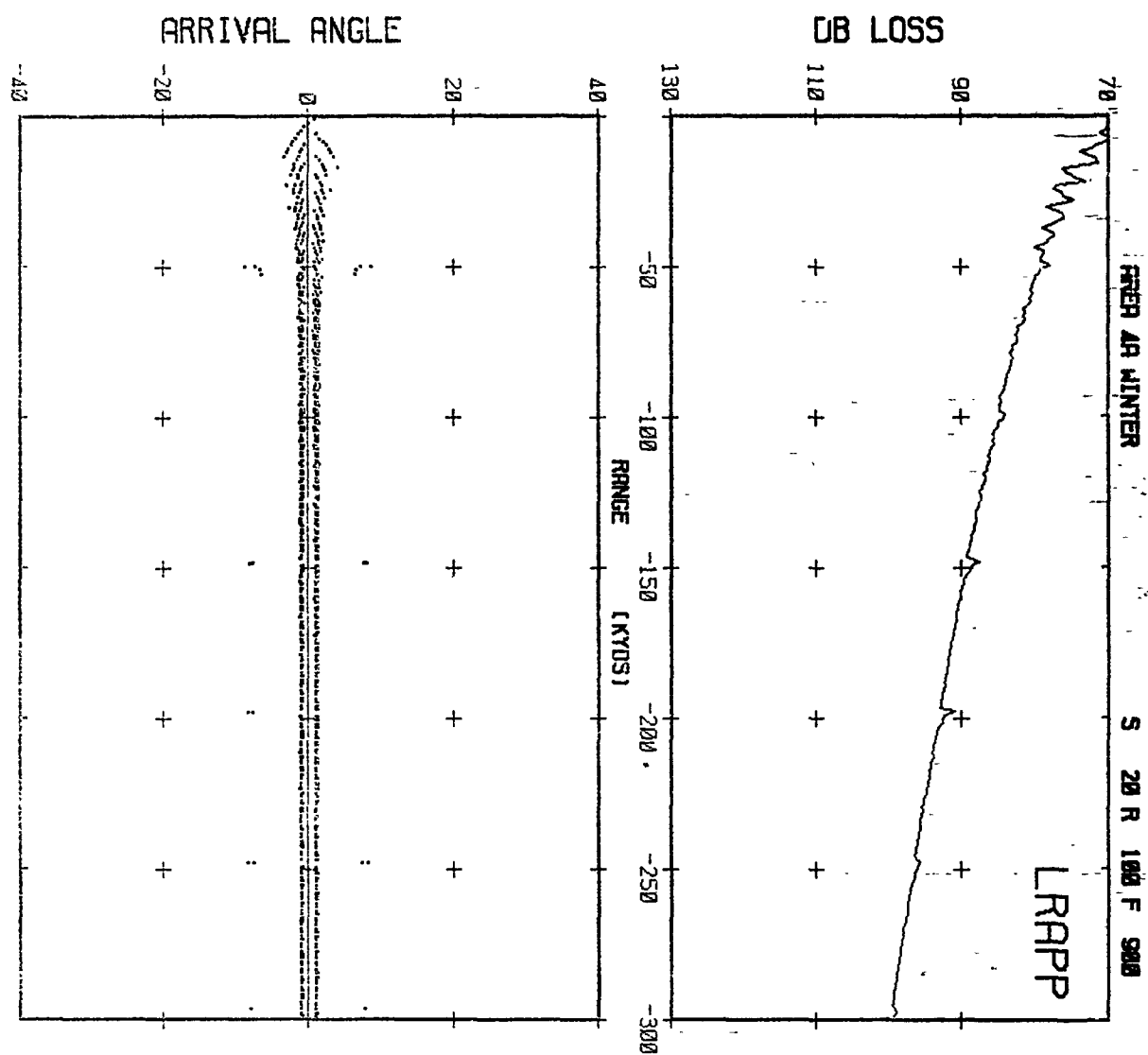


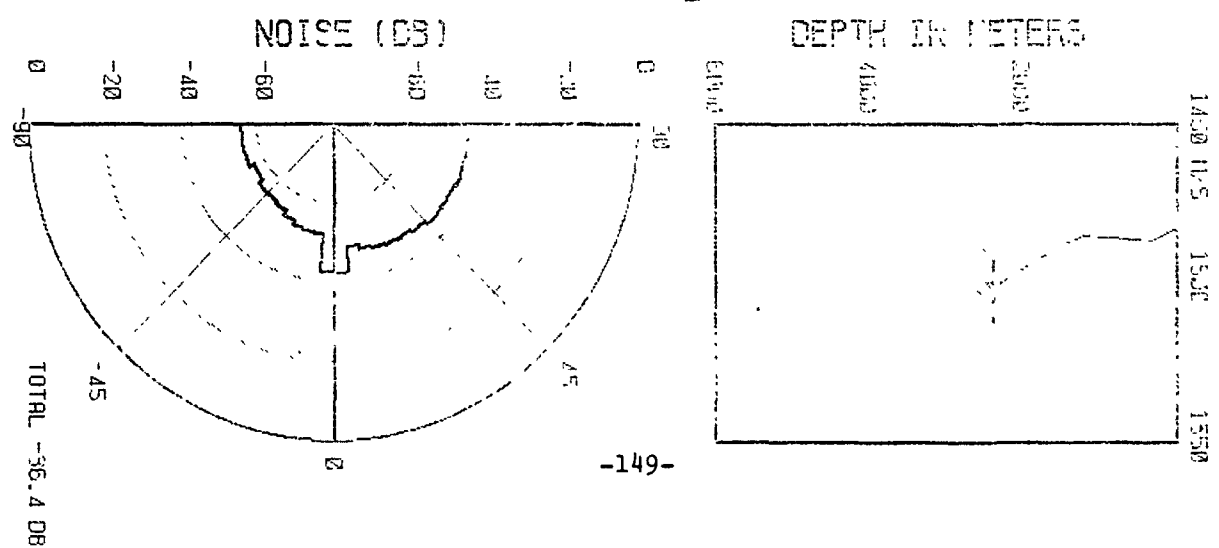
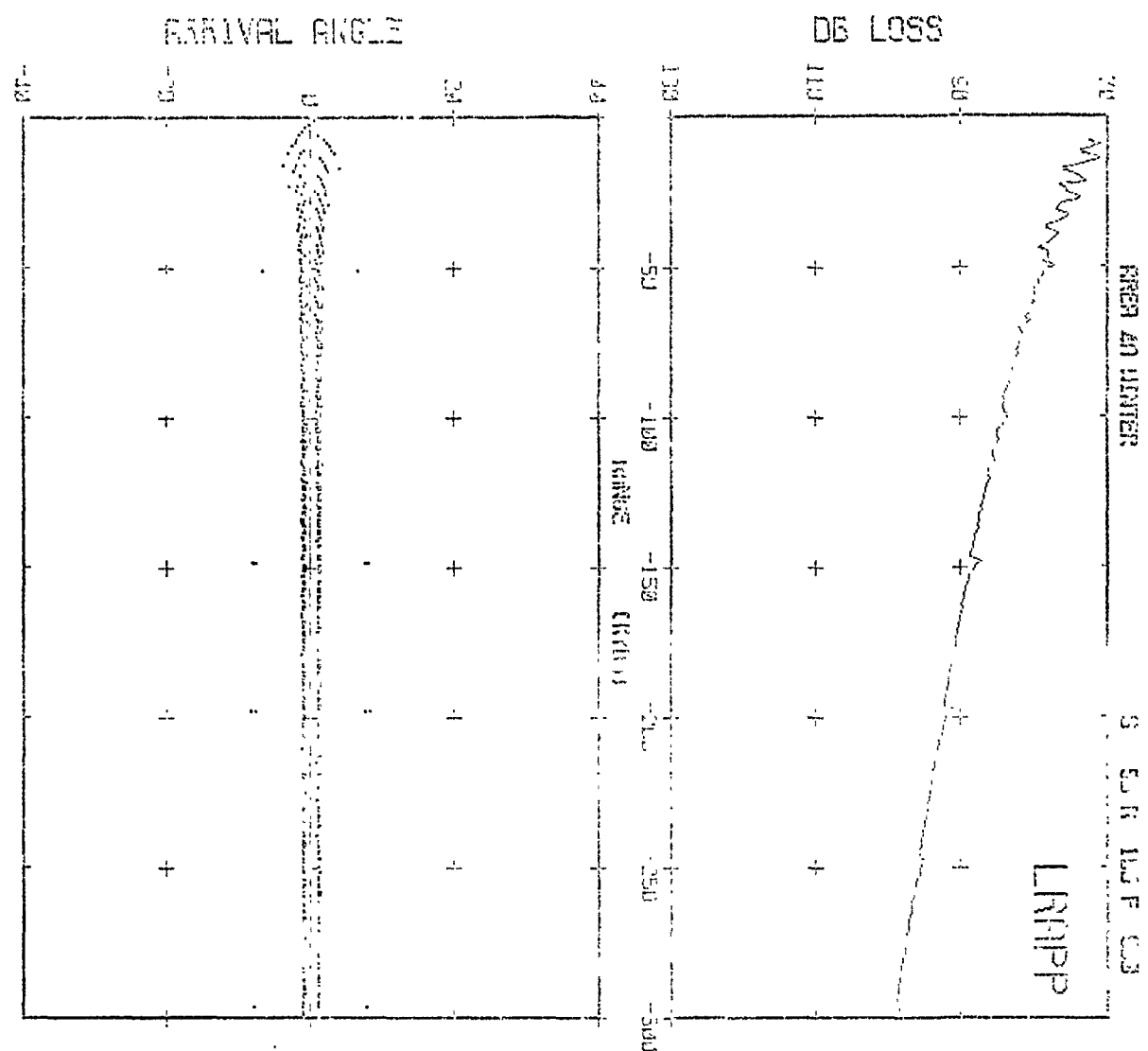


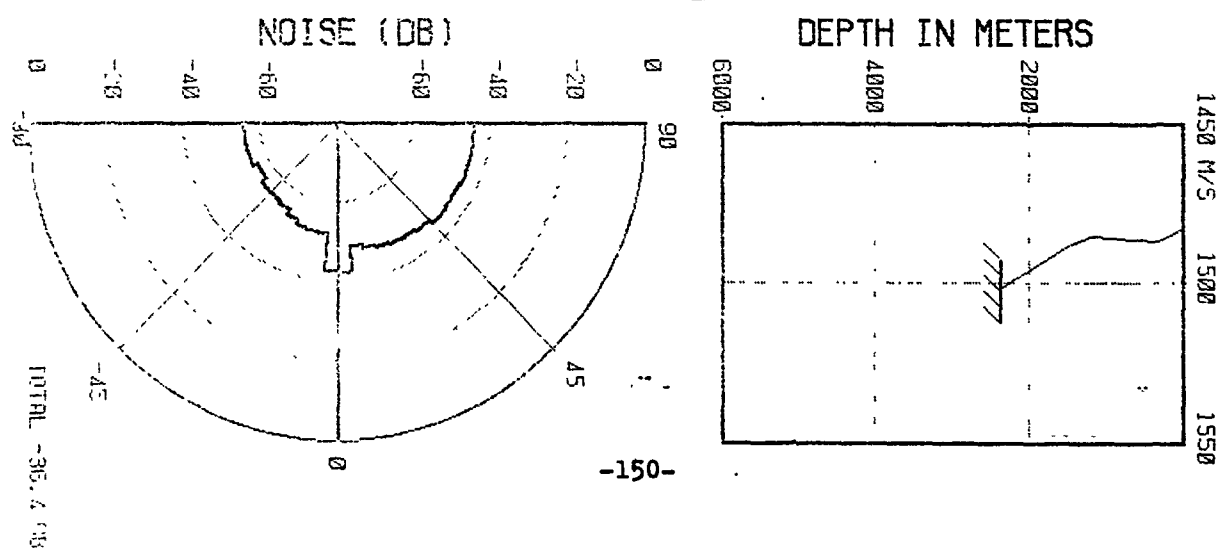
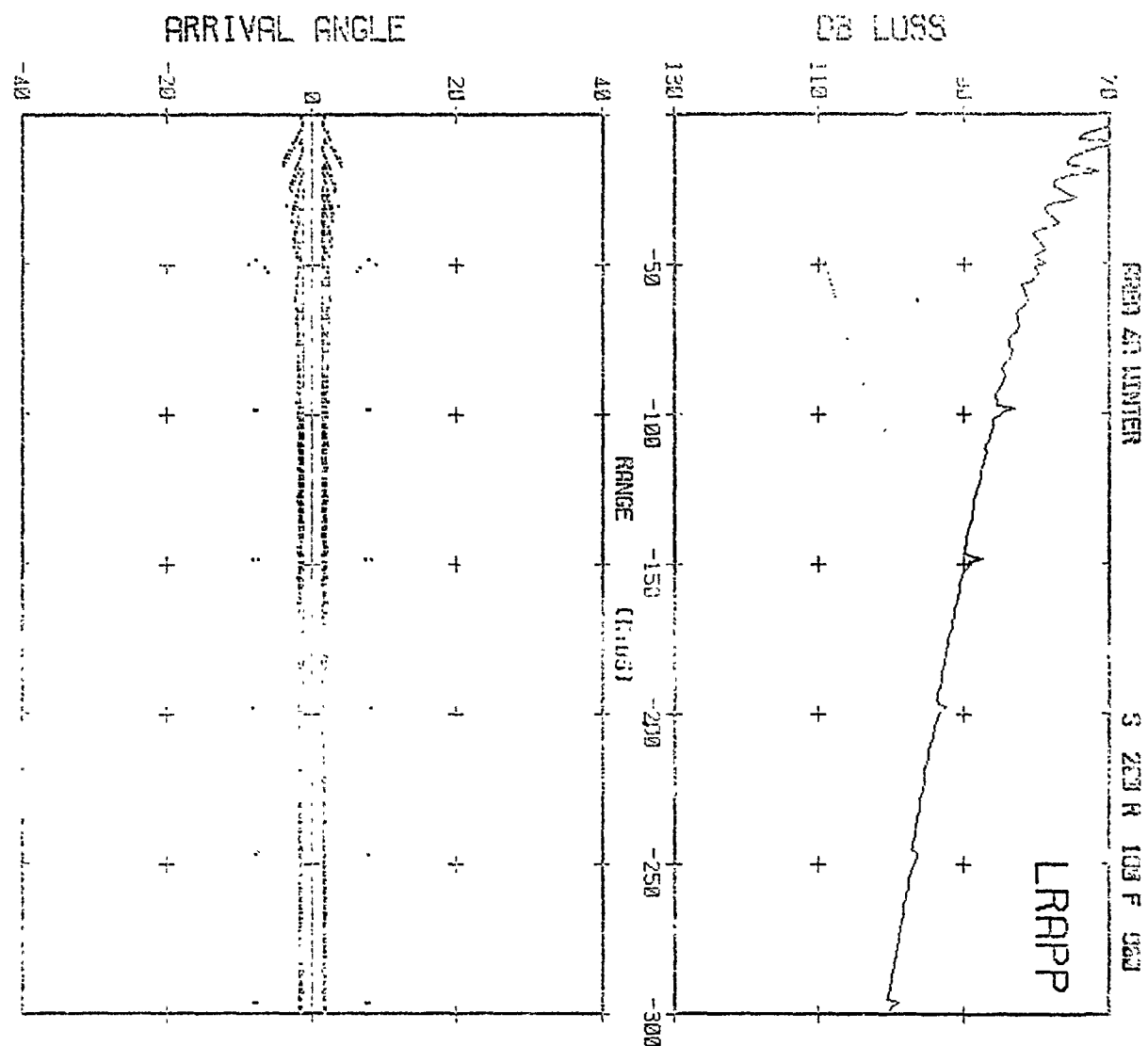


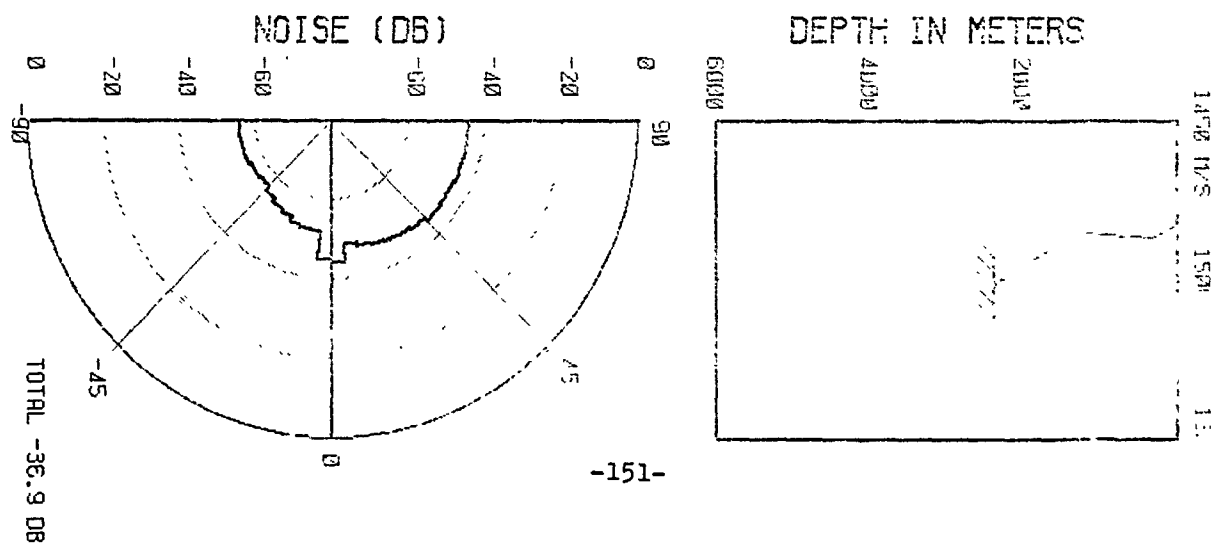
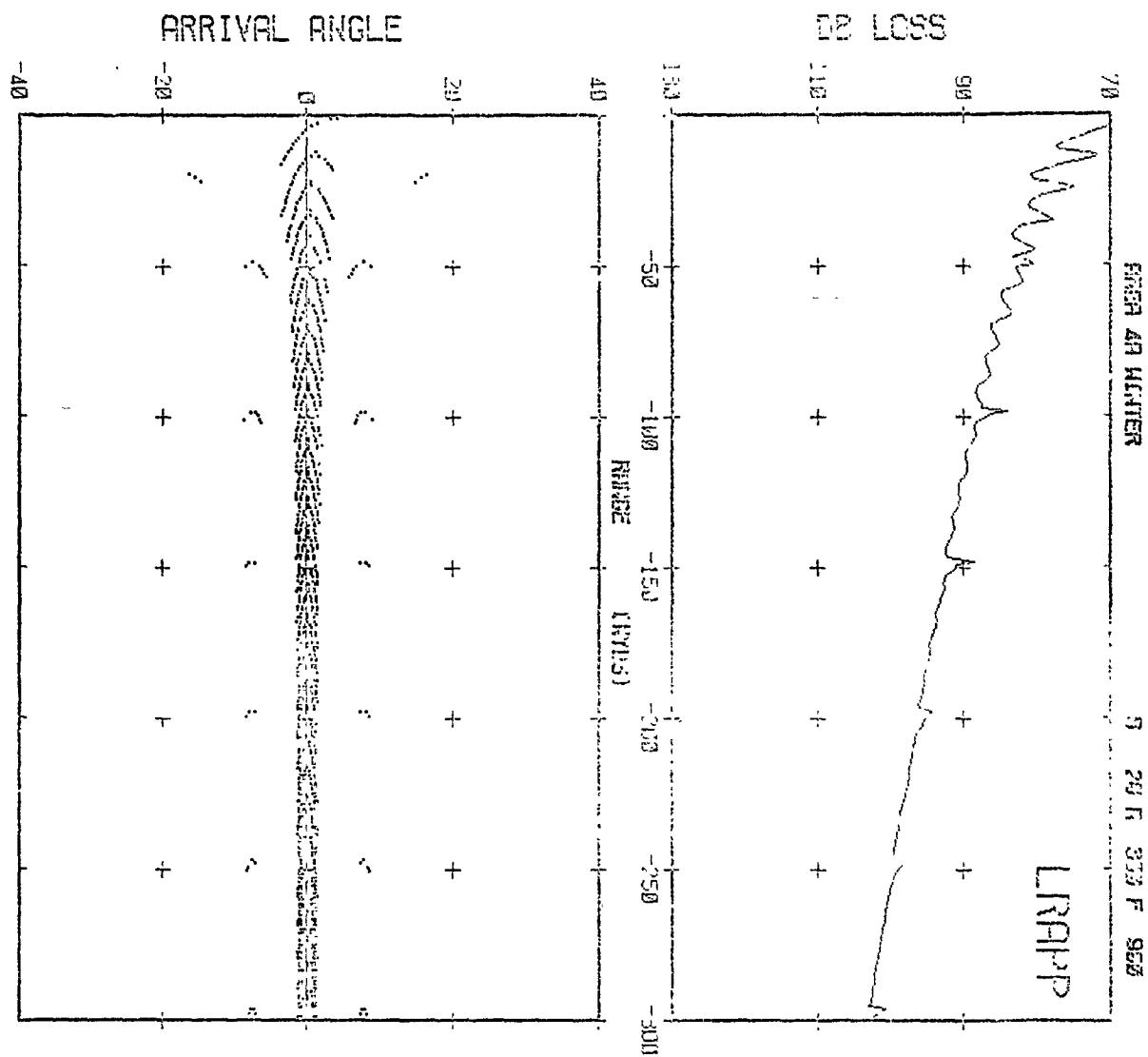


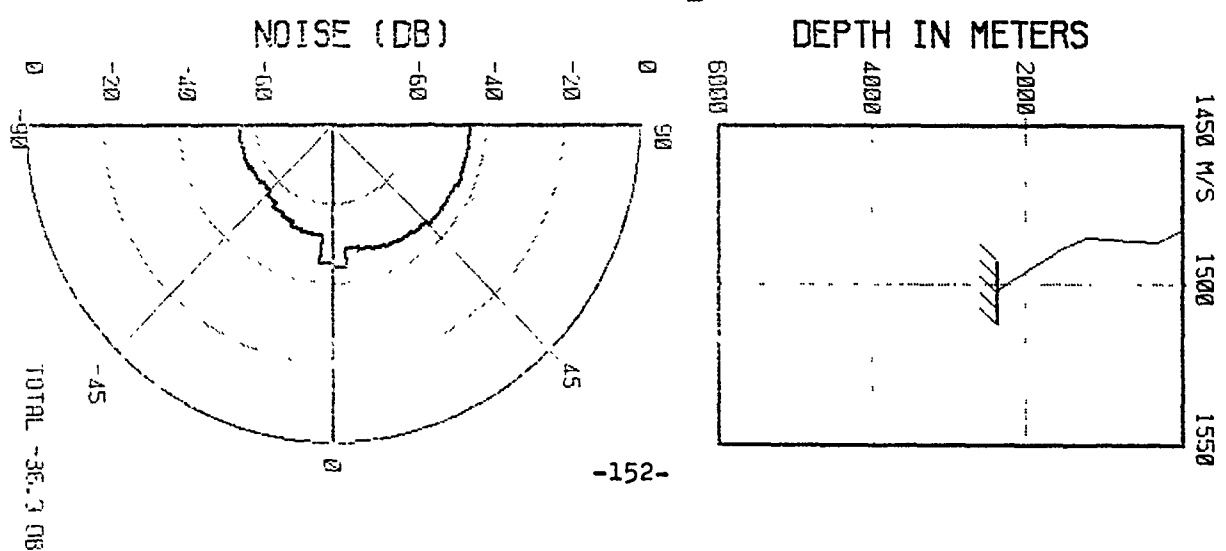
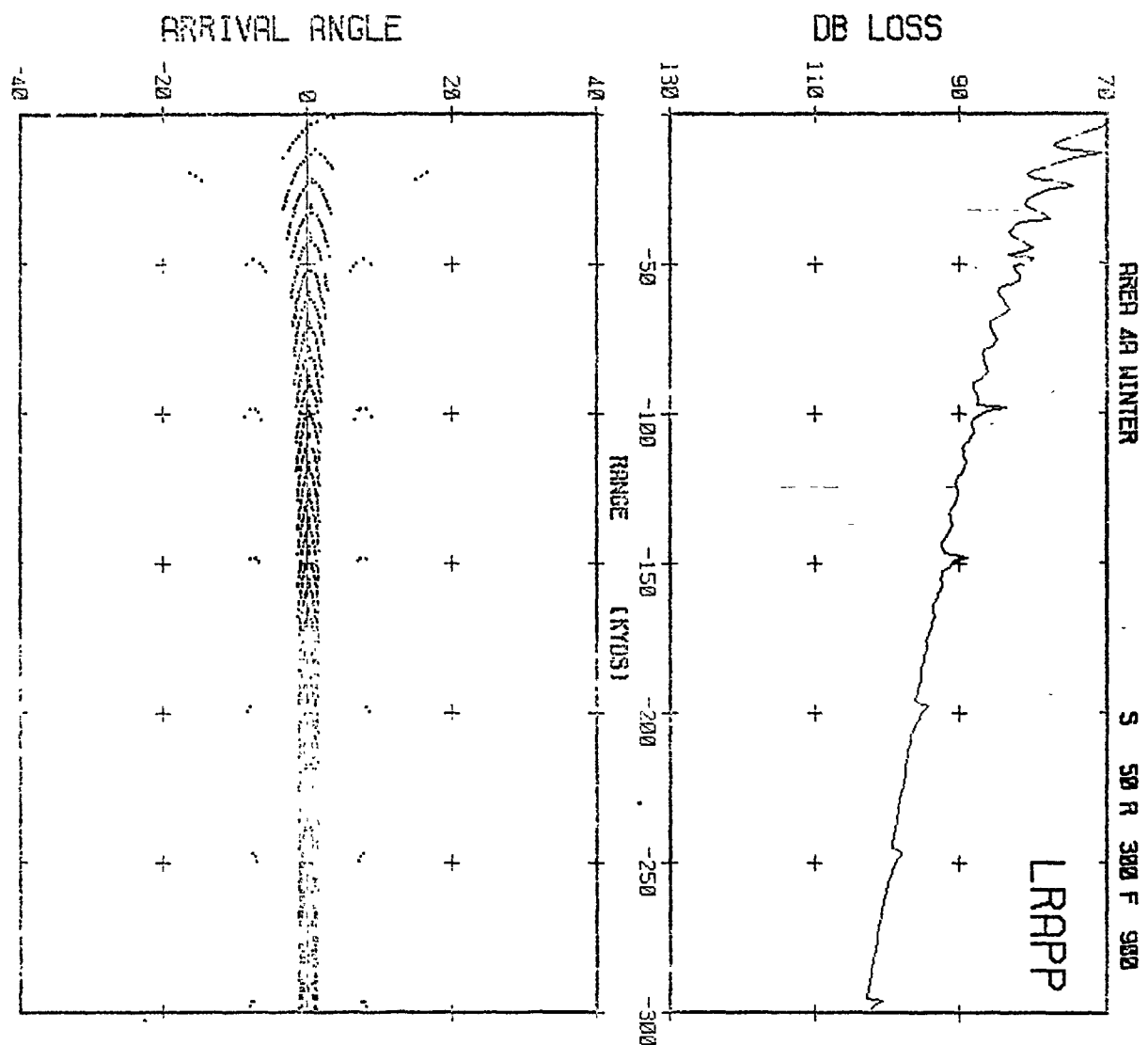


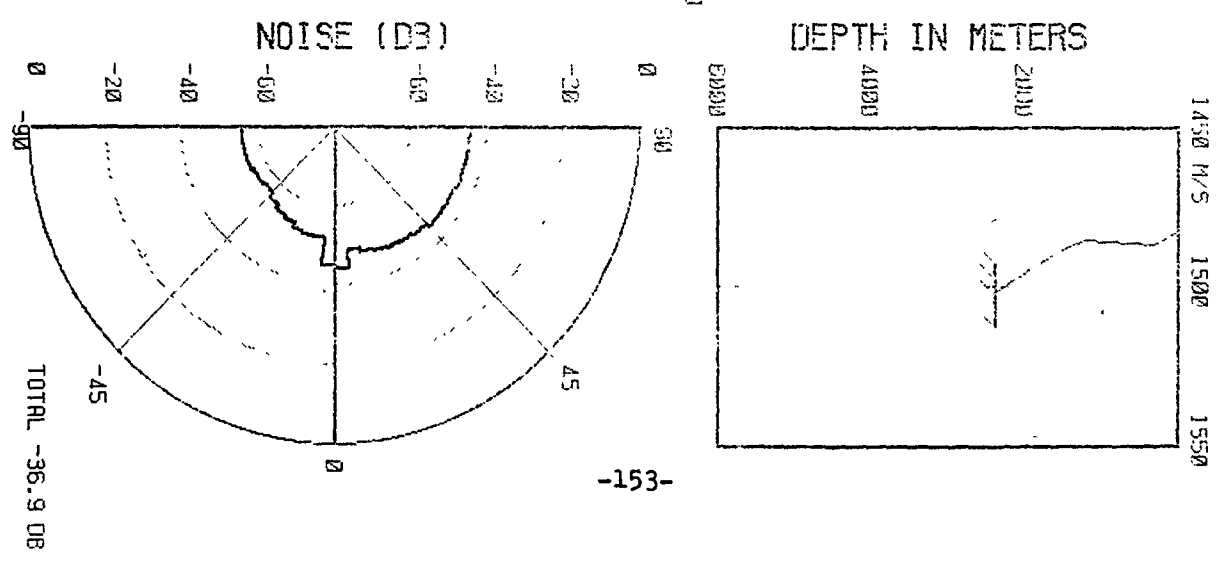
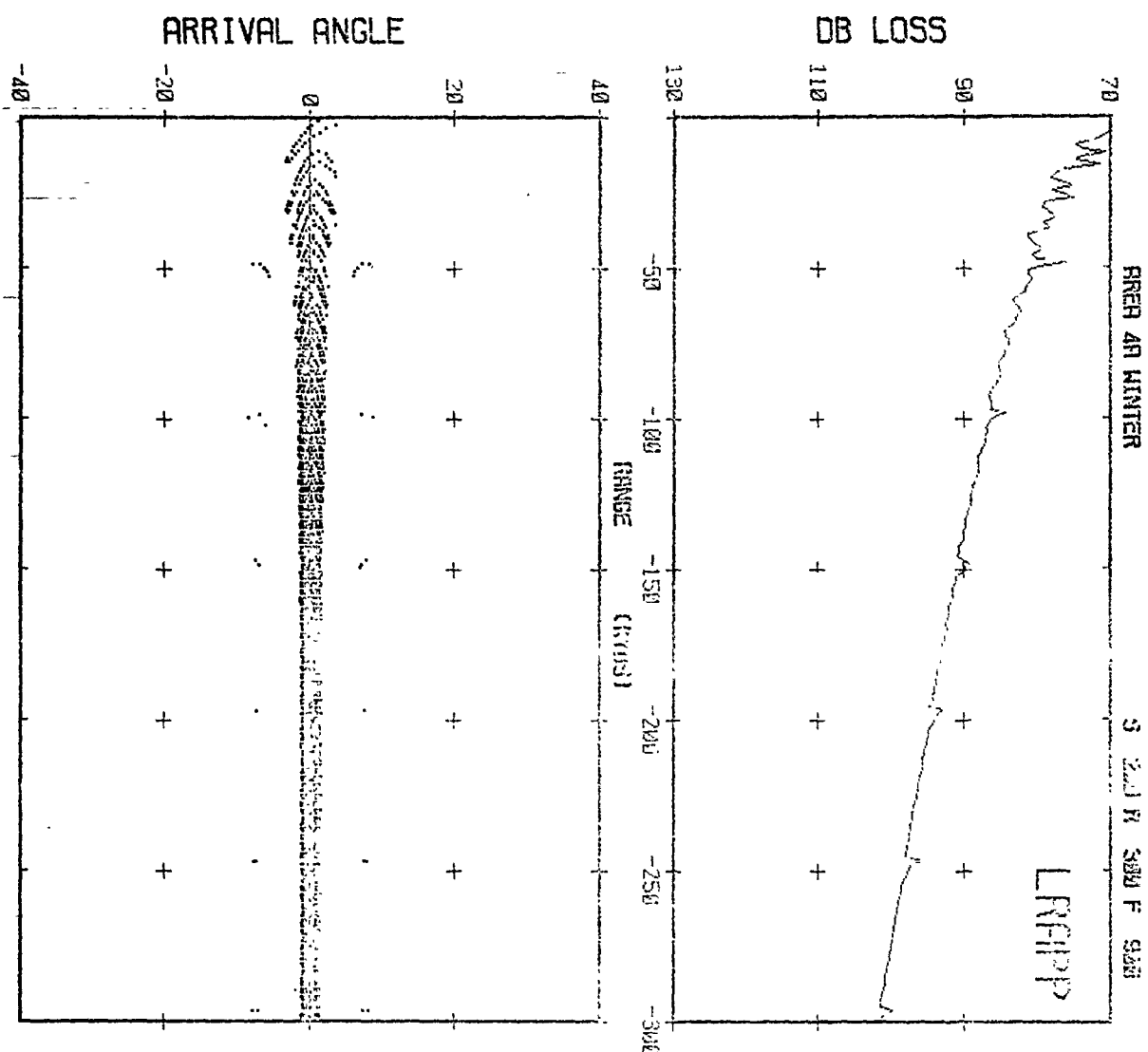


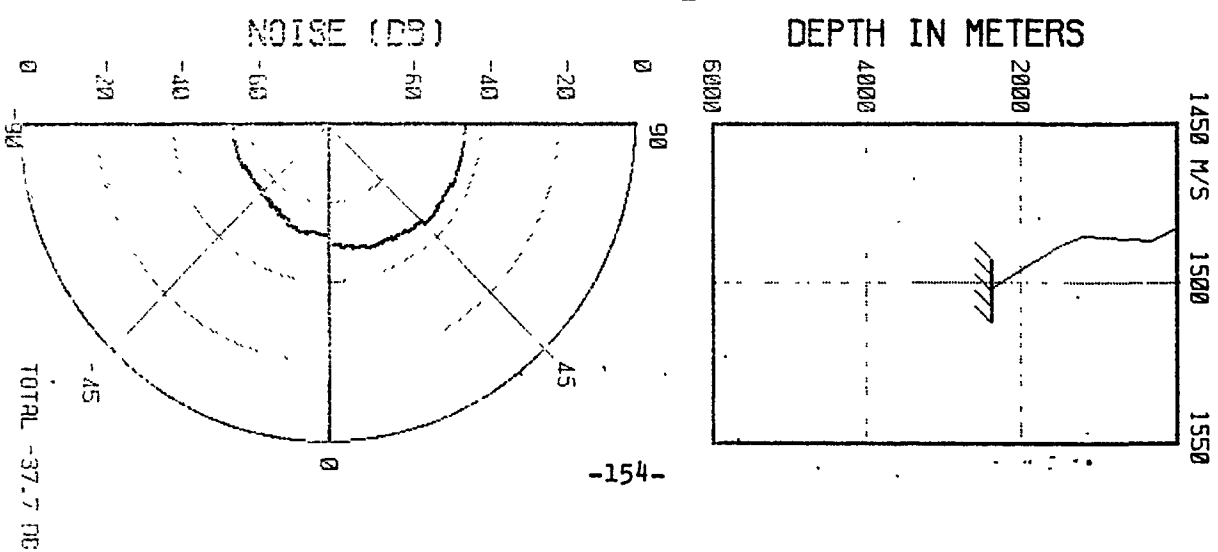
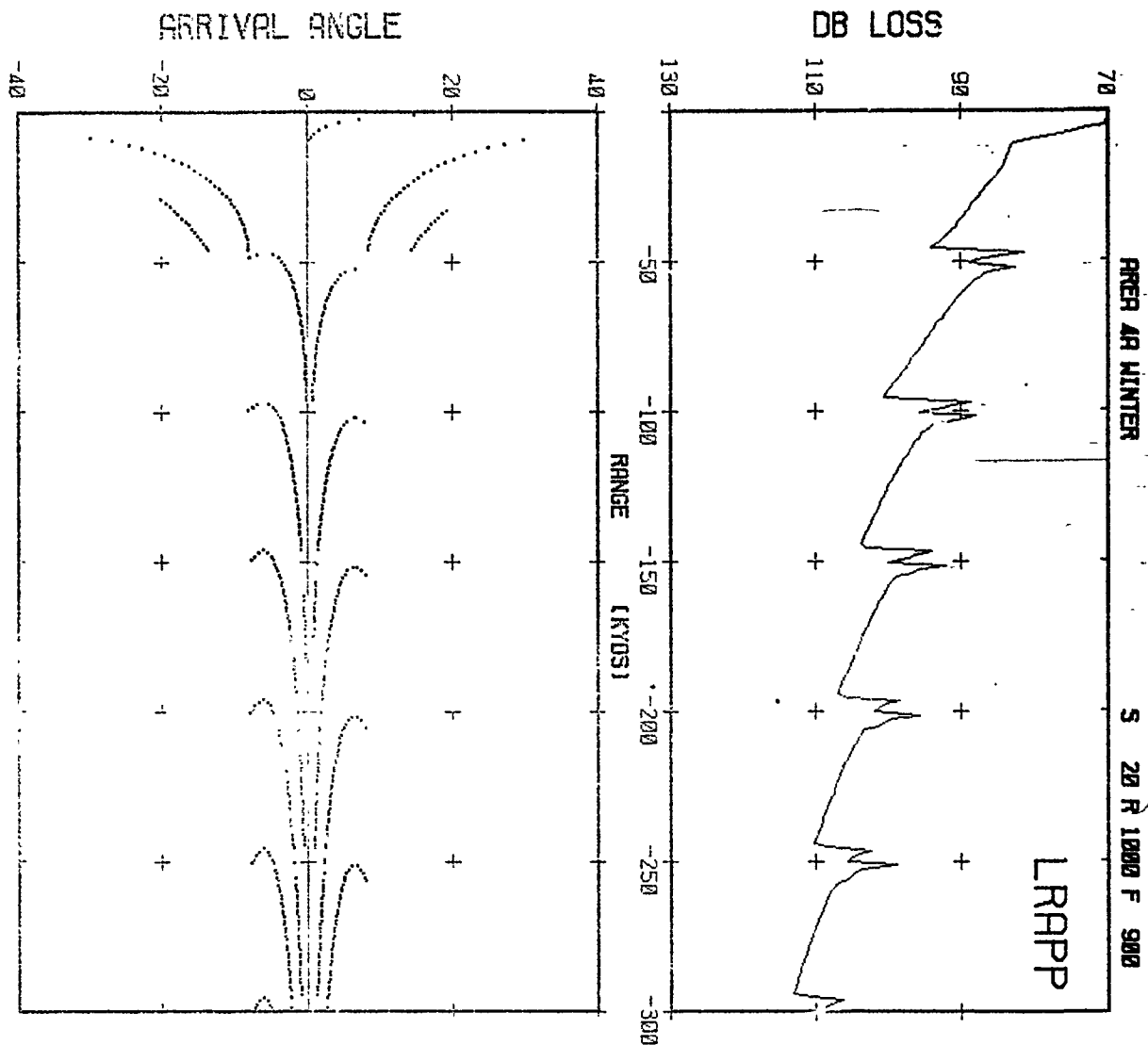










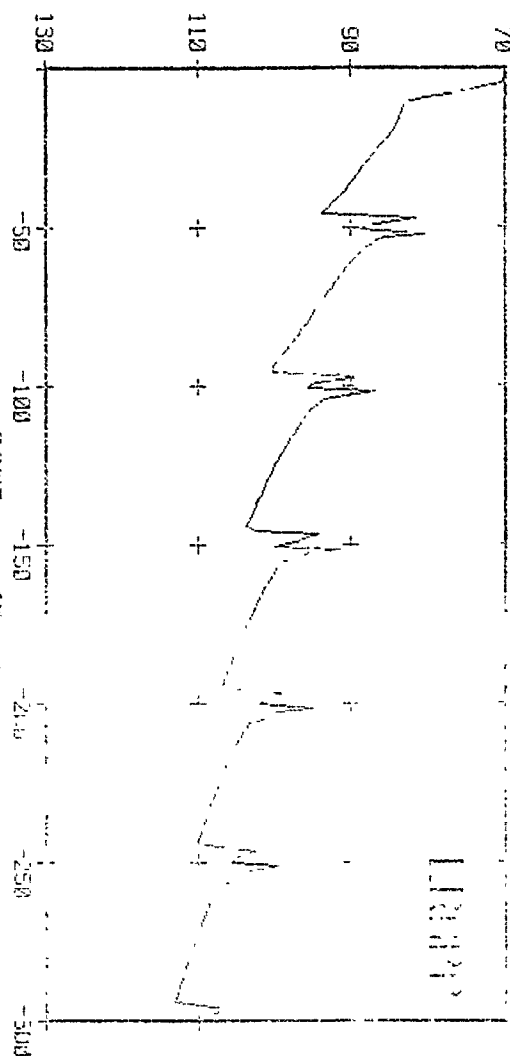


AREA 4R LUNTER

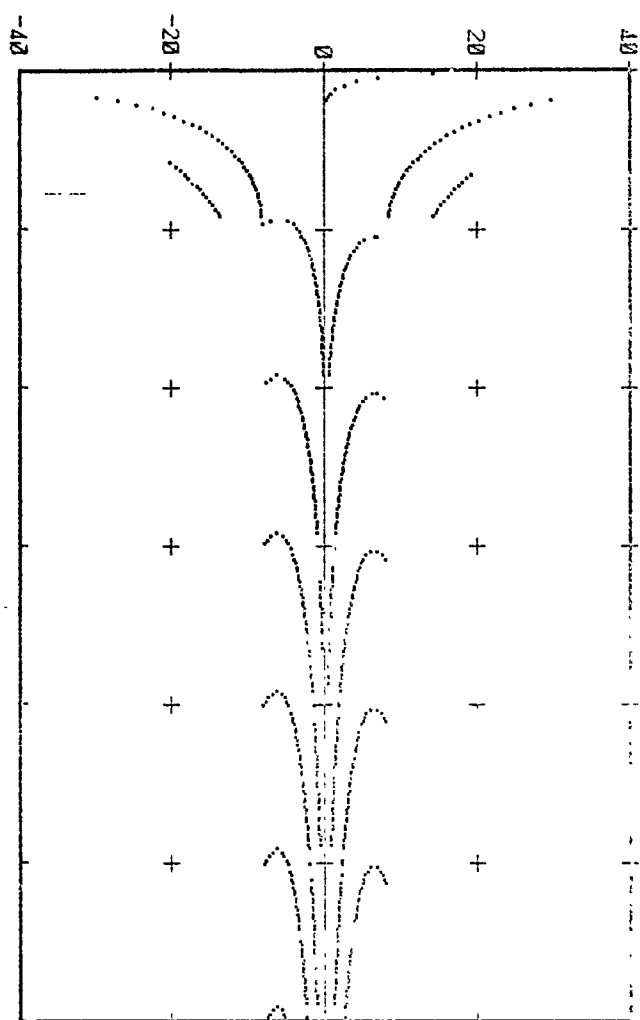
3 SURF J

1450 11/5 1500 1550

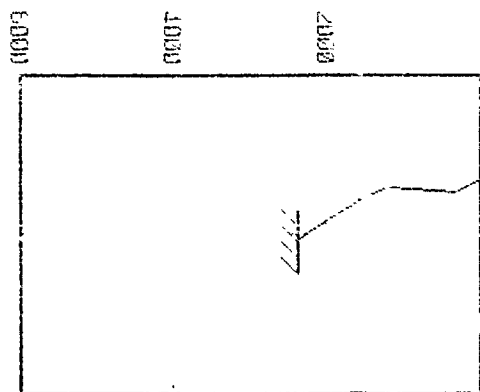
DB LOSS



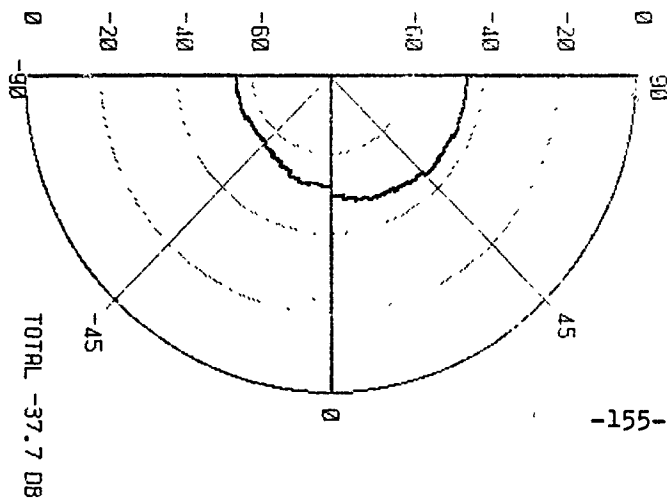
ARRIVAL ANGLE

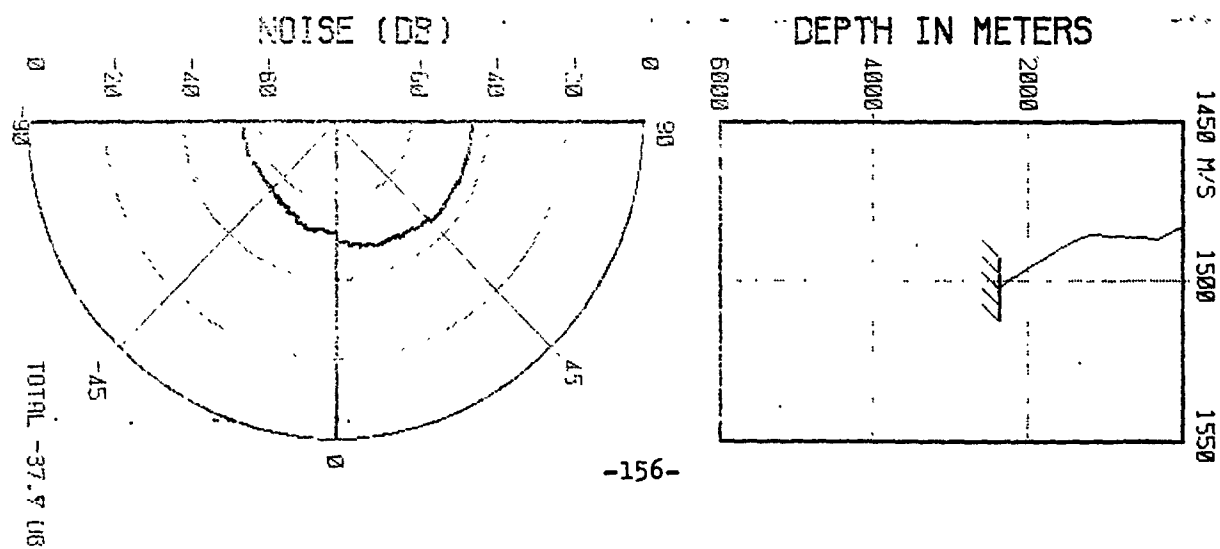
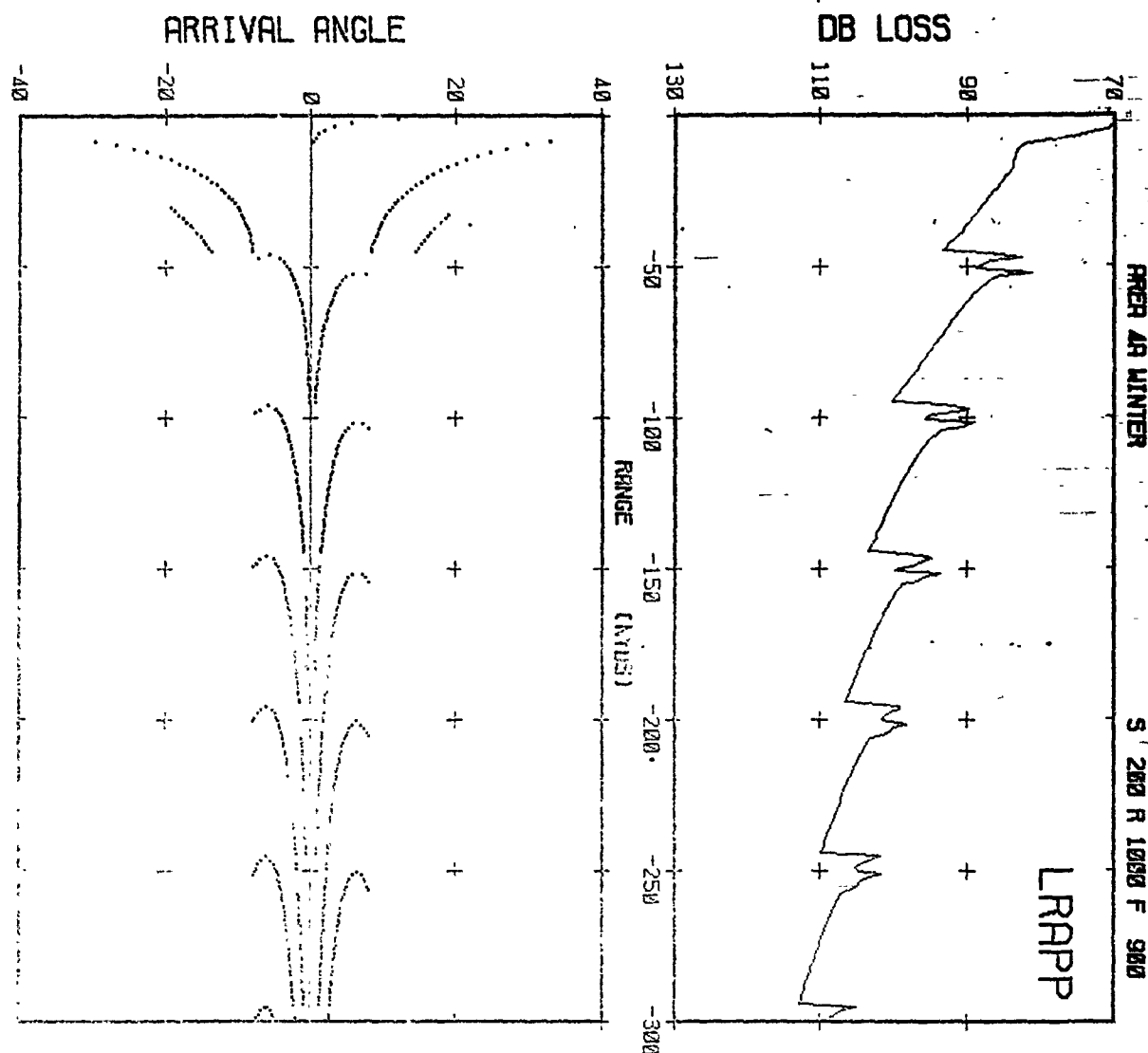


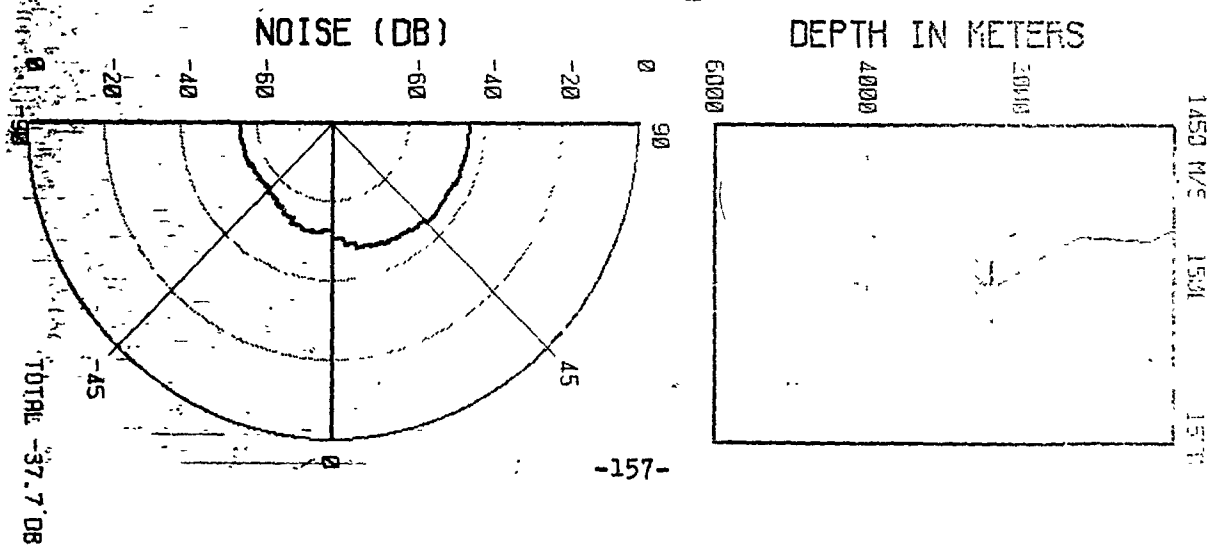
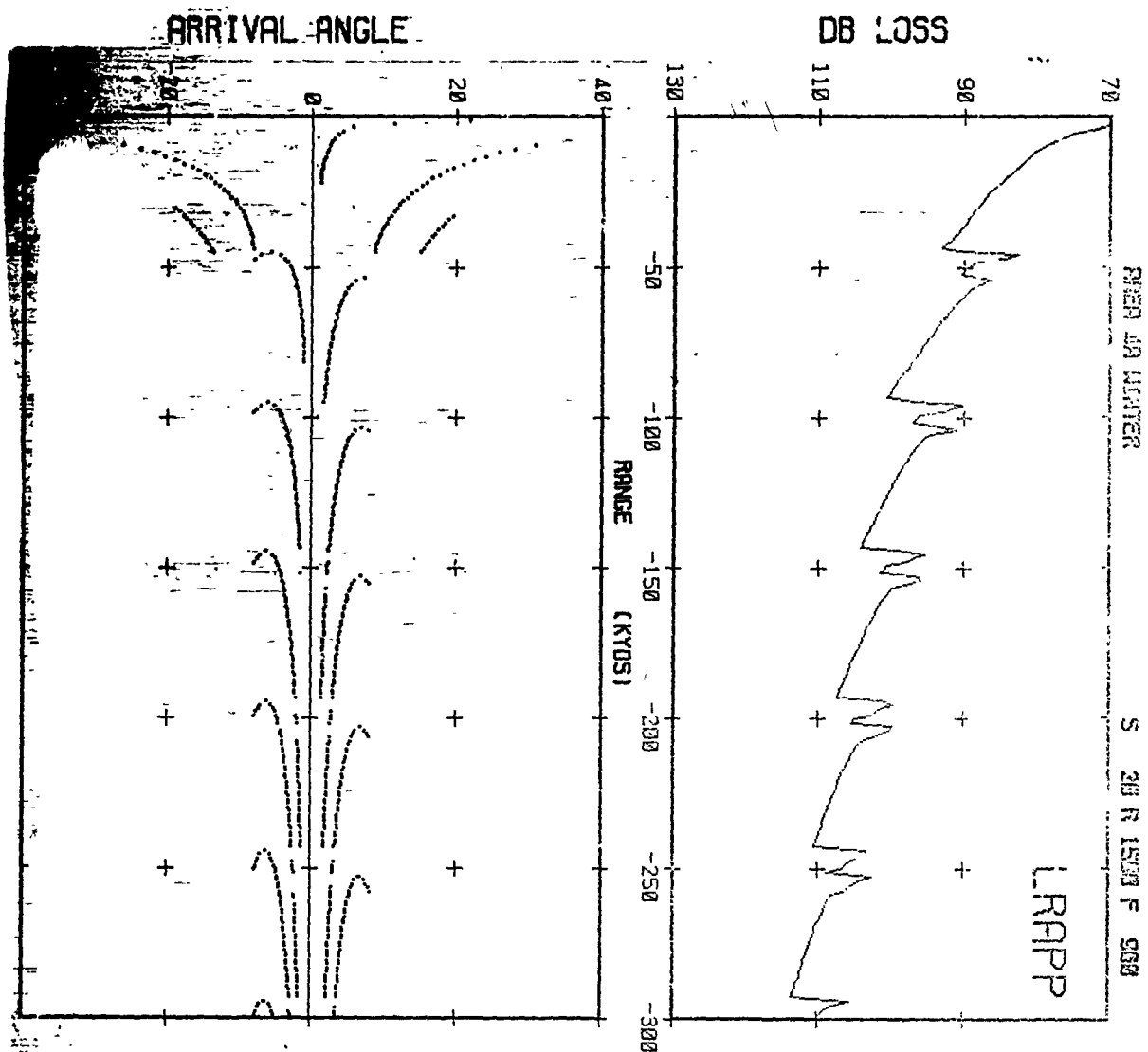
DEPTH IN METERS

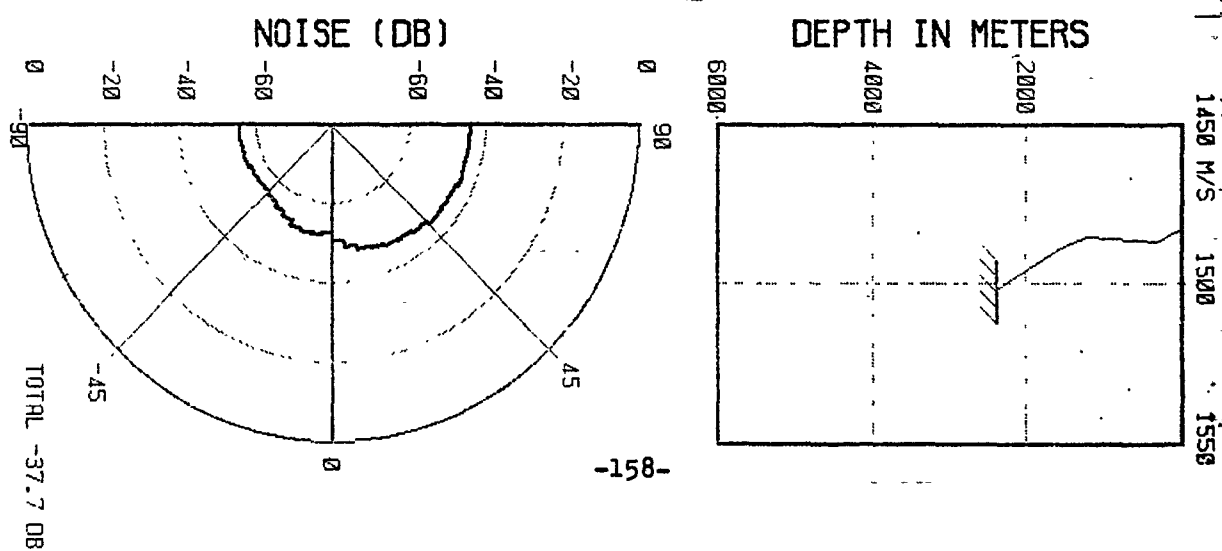
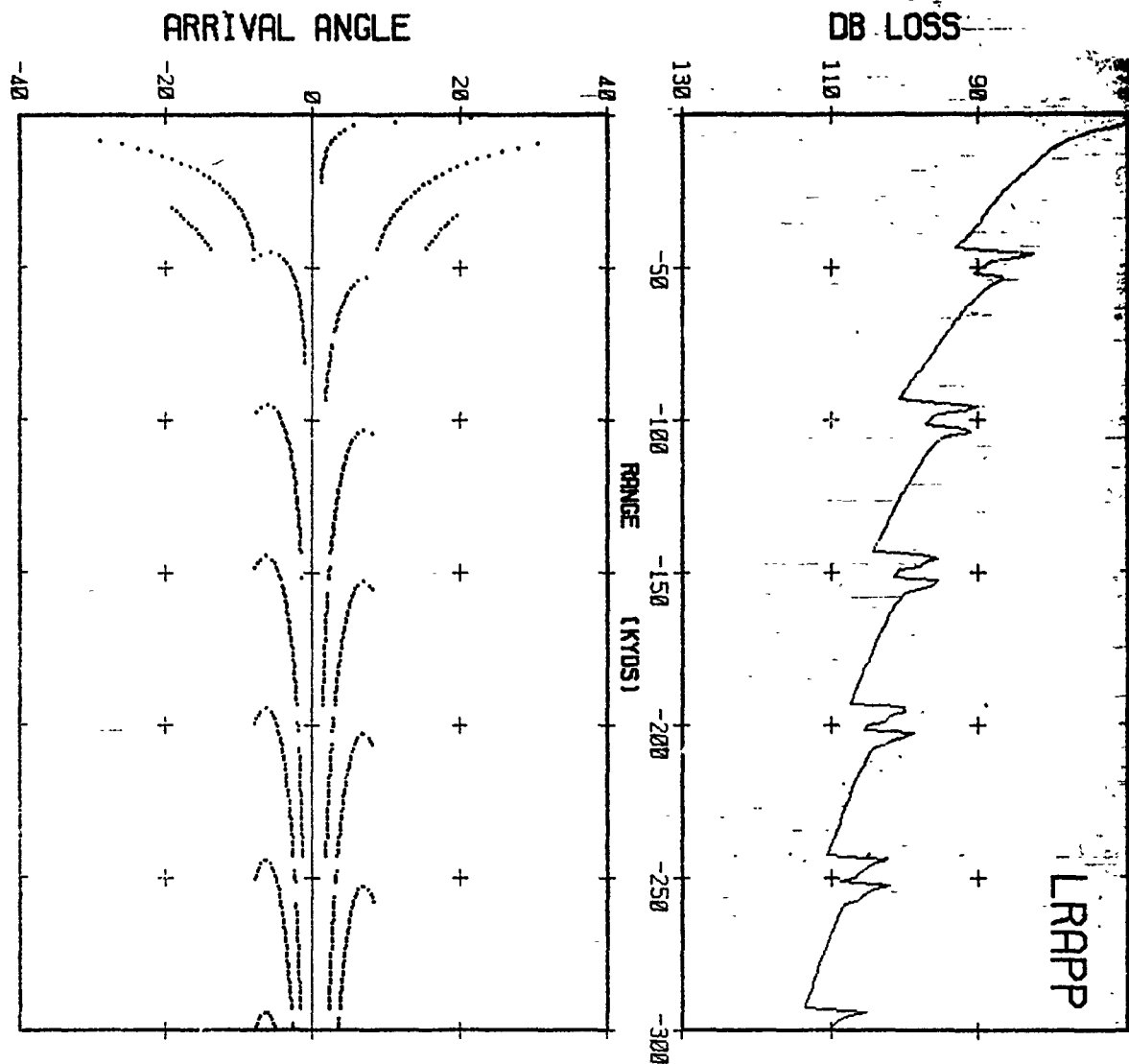


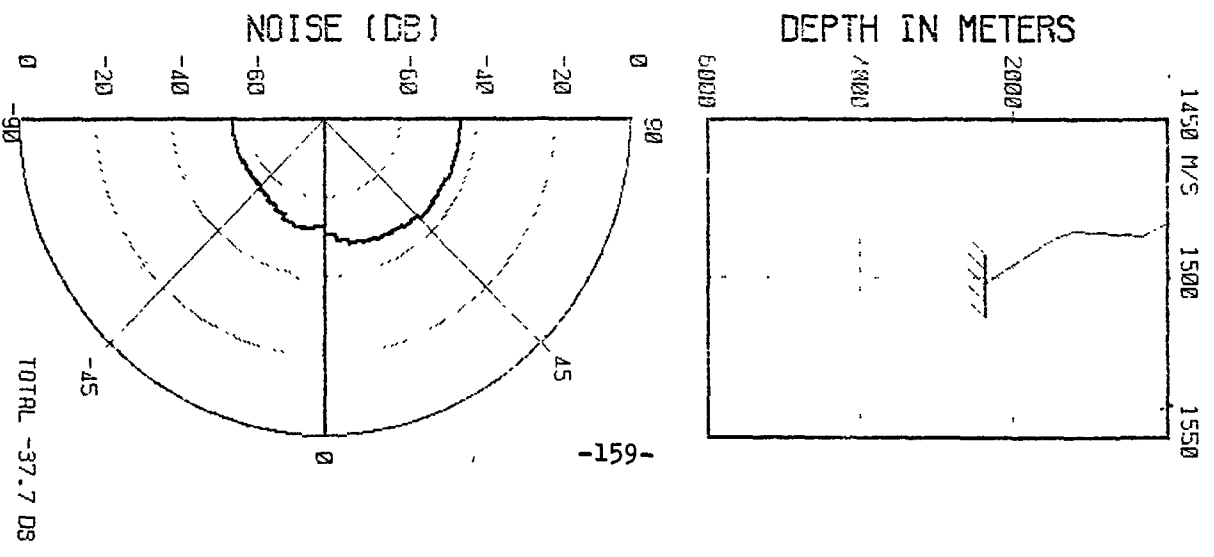
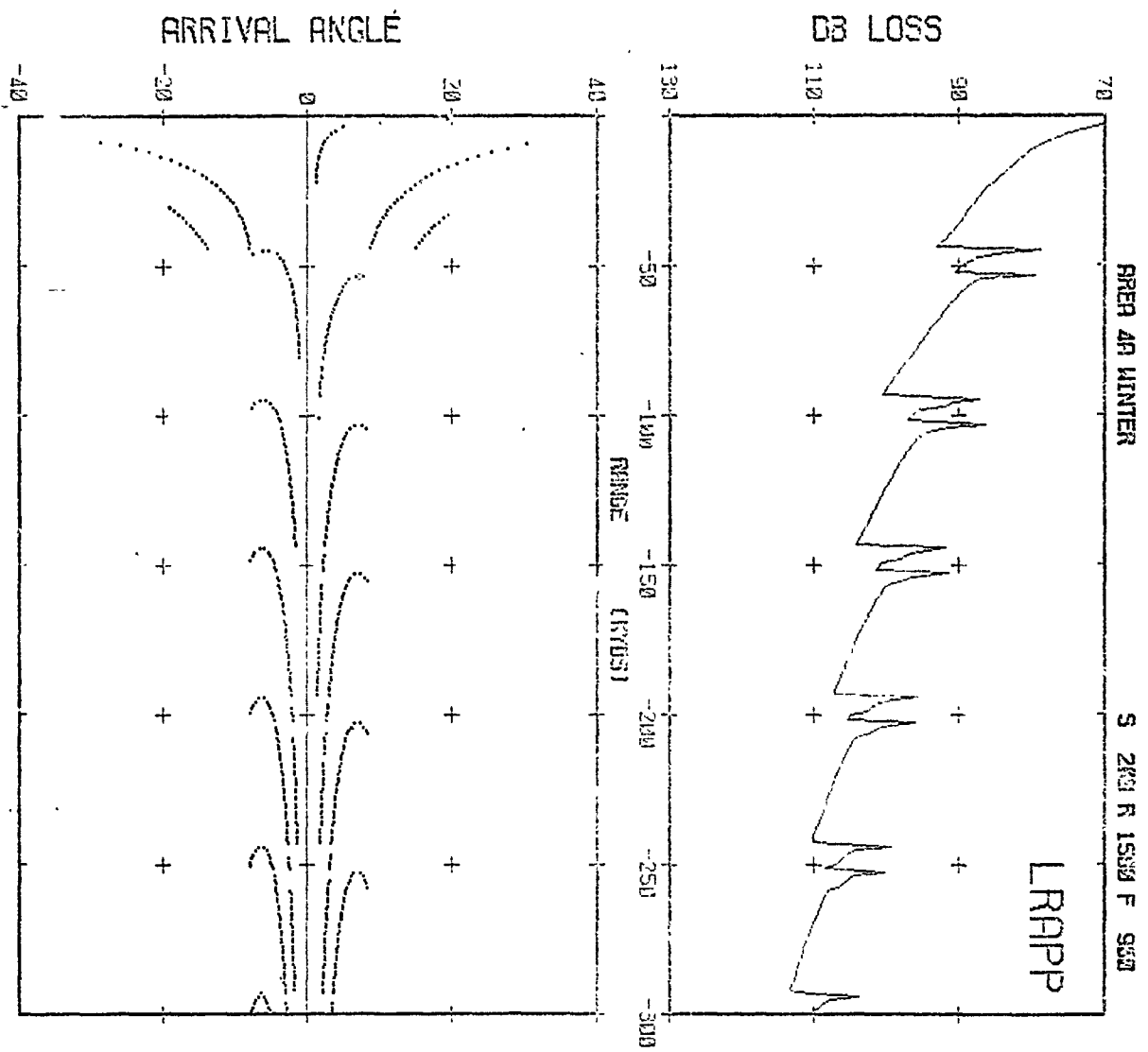
NOISE (DB)









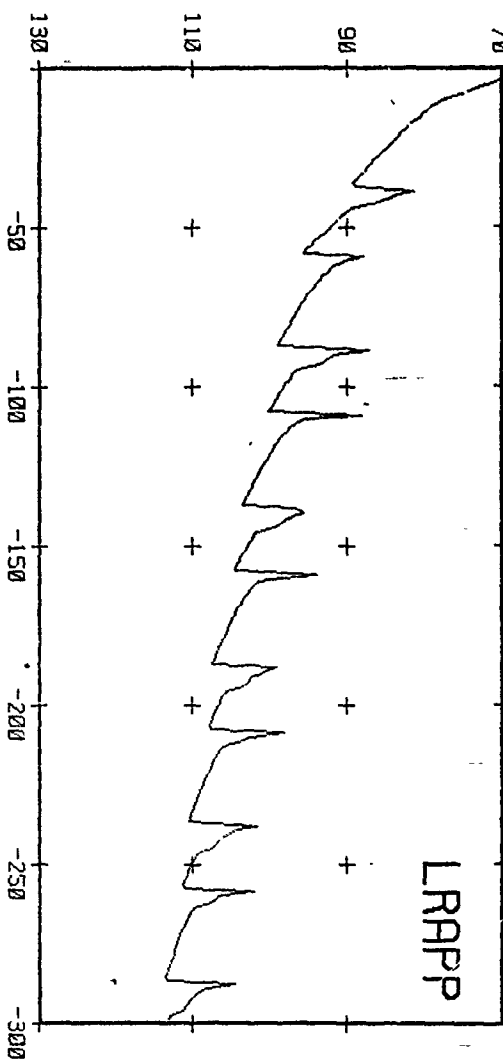


AREA 4A WINTER

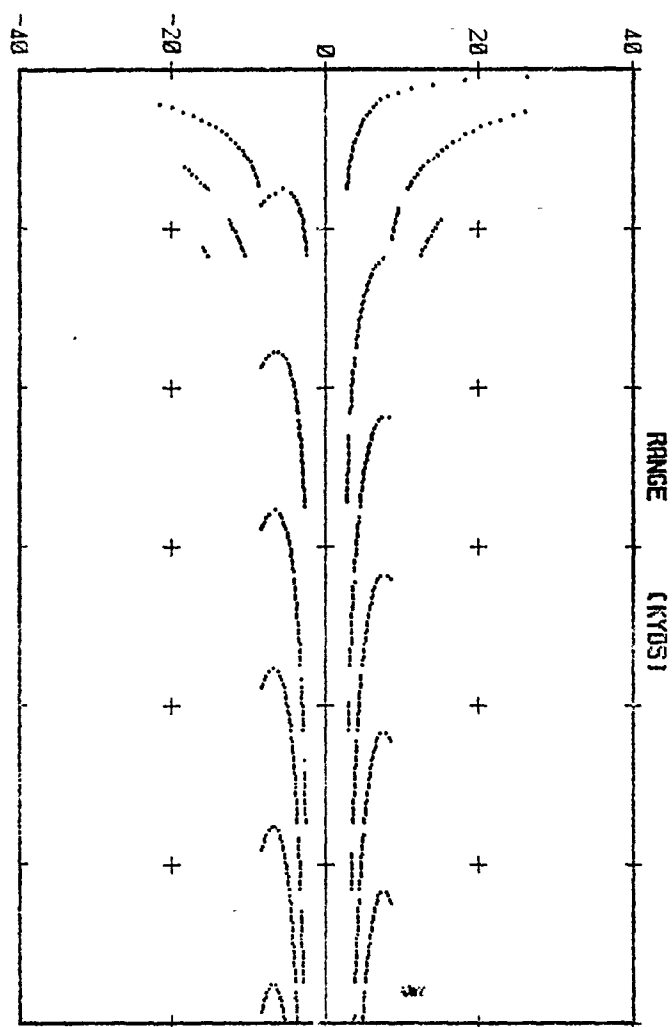
S 20 R 3629 F 900

LRAPP

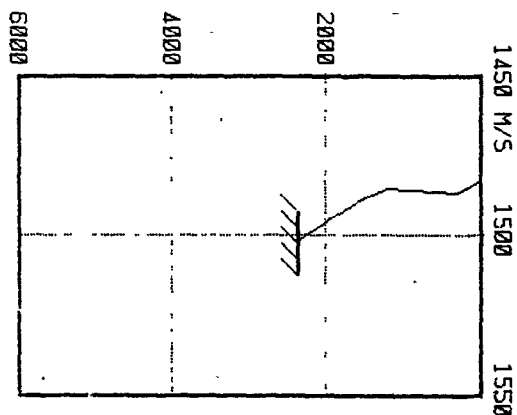
DB LOSS



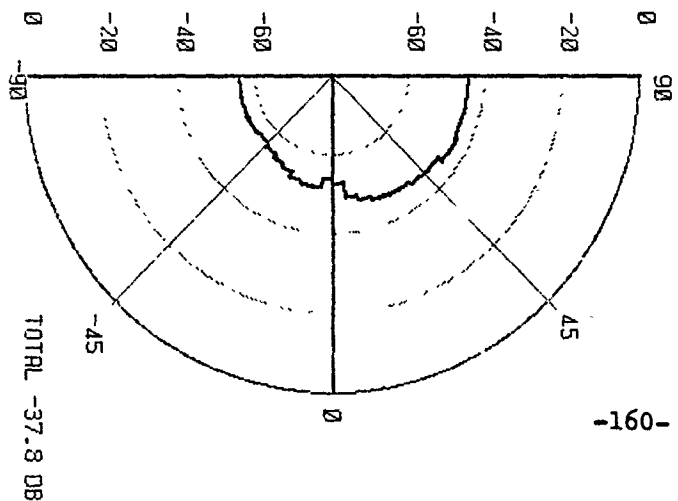
ARRIVAL ANGLE



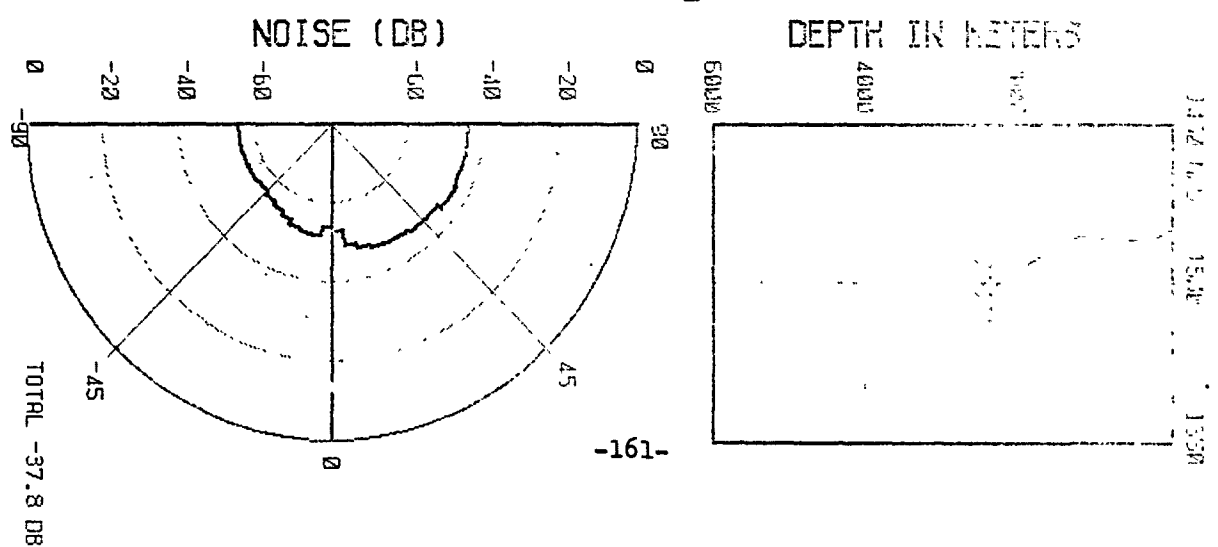
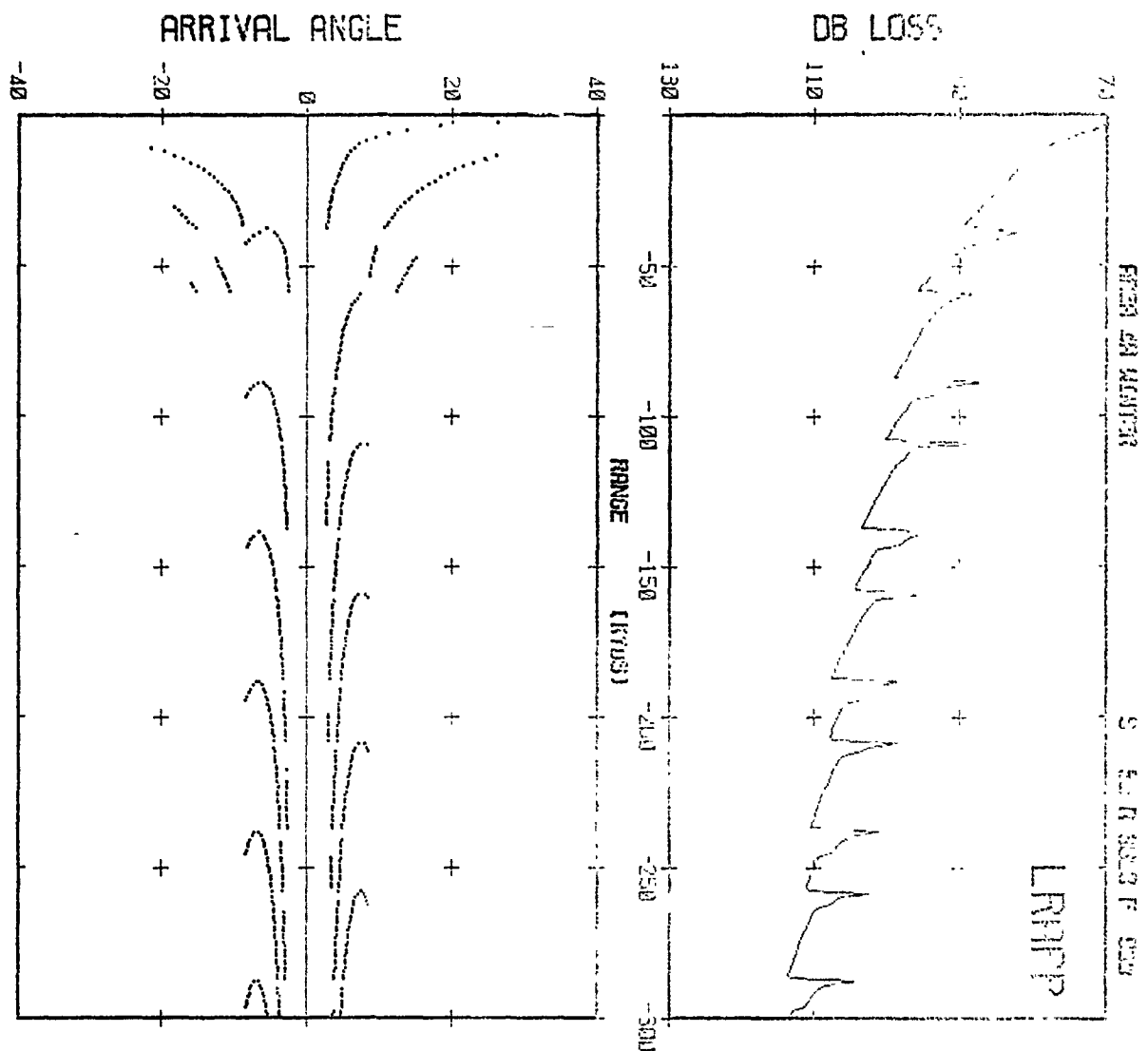
DEPTH IN METERS

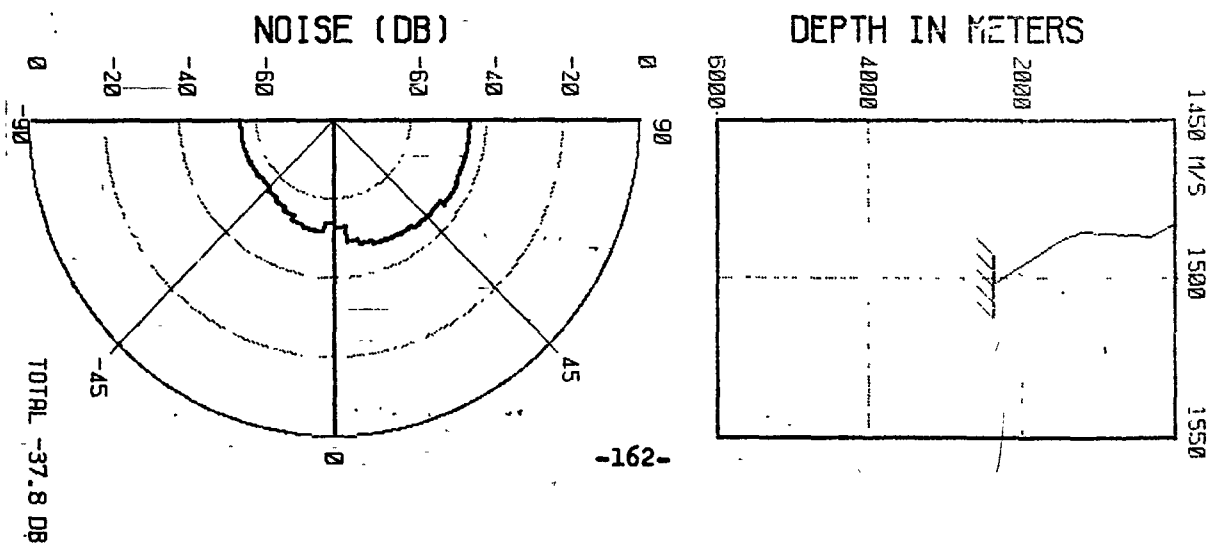
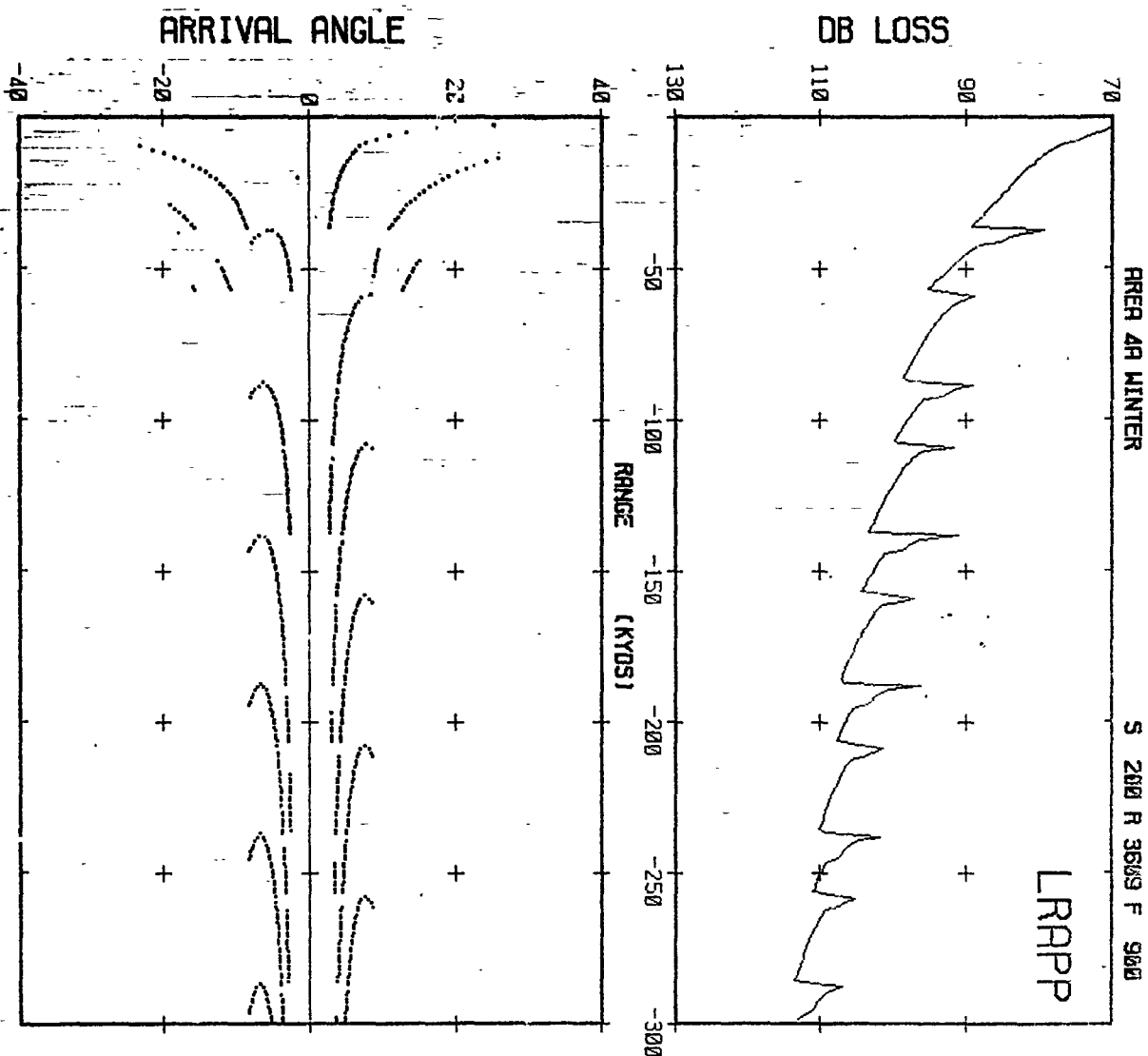


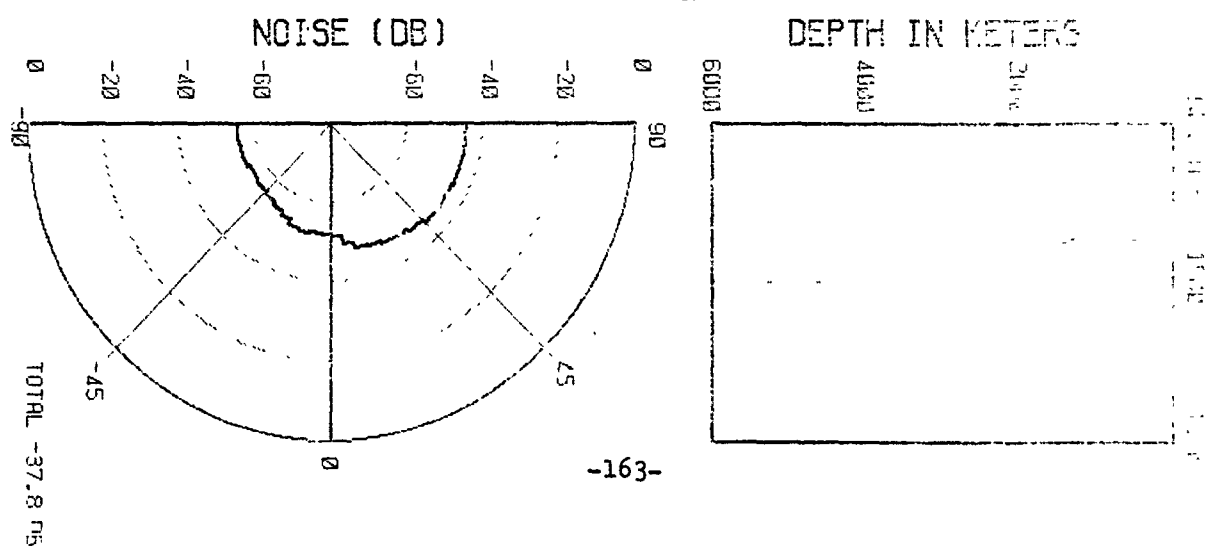
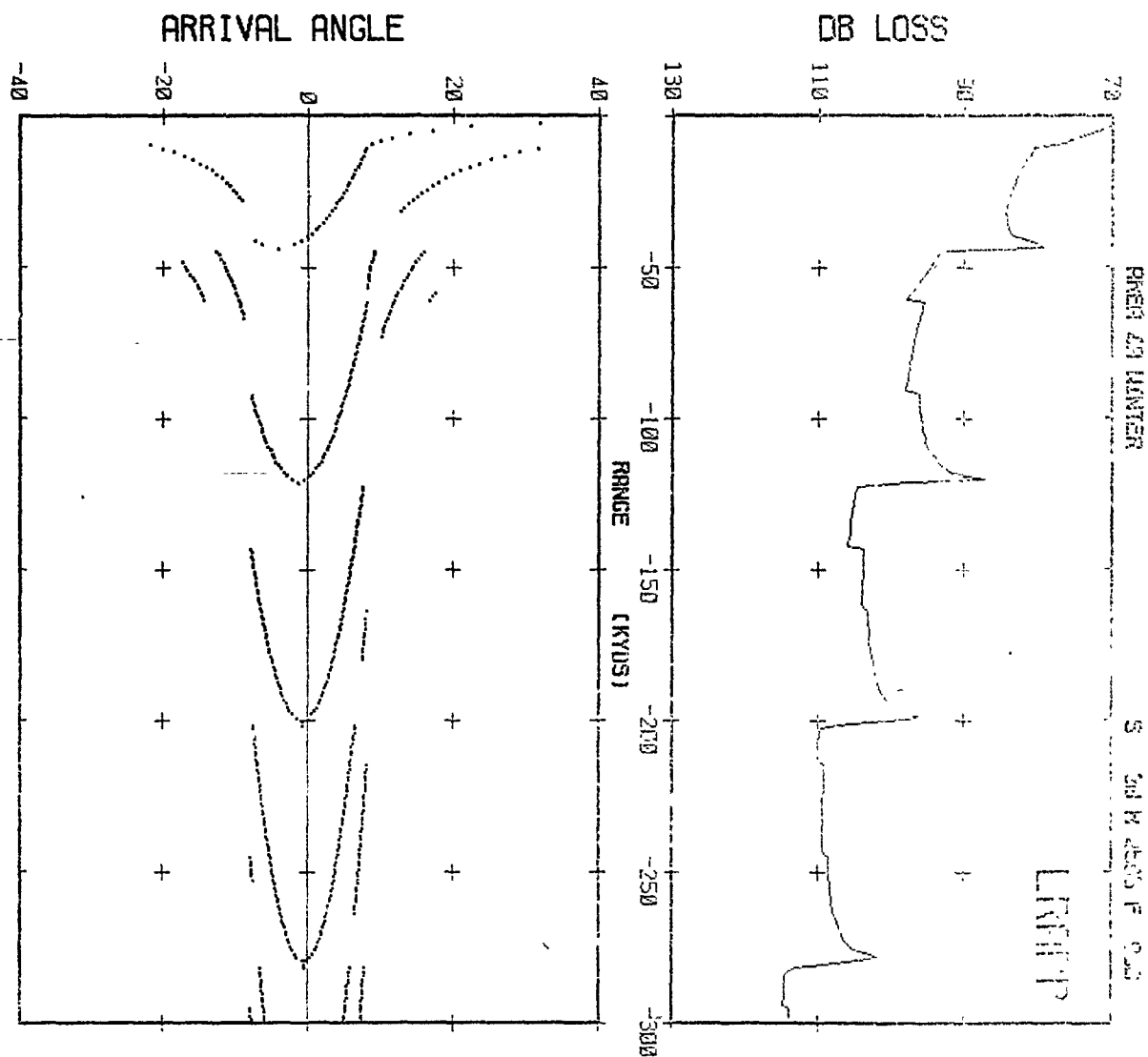
NOISE (DB)

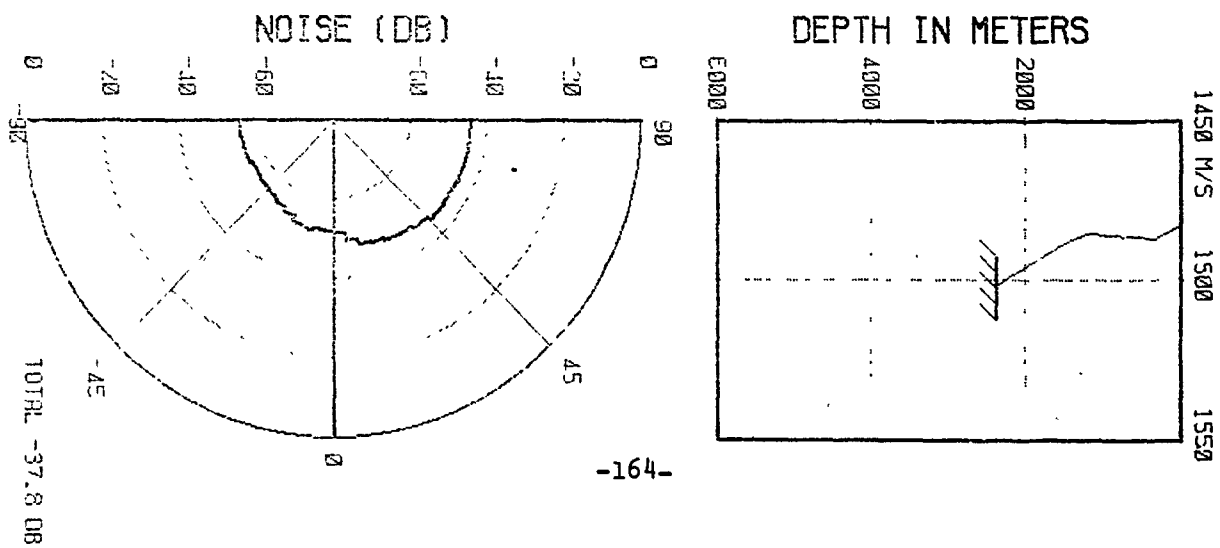
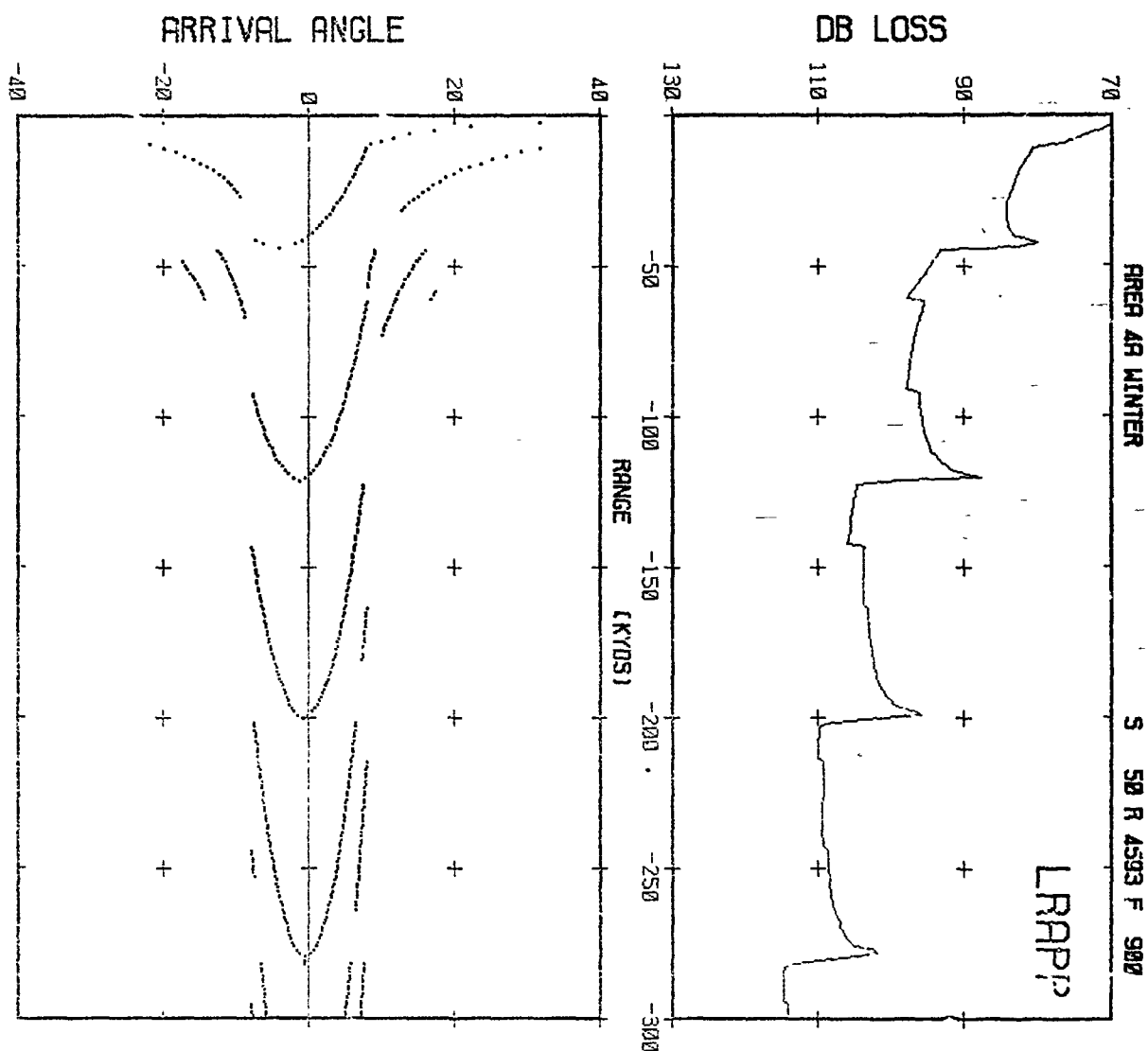


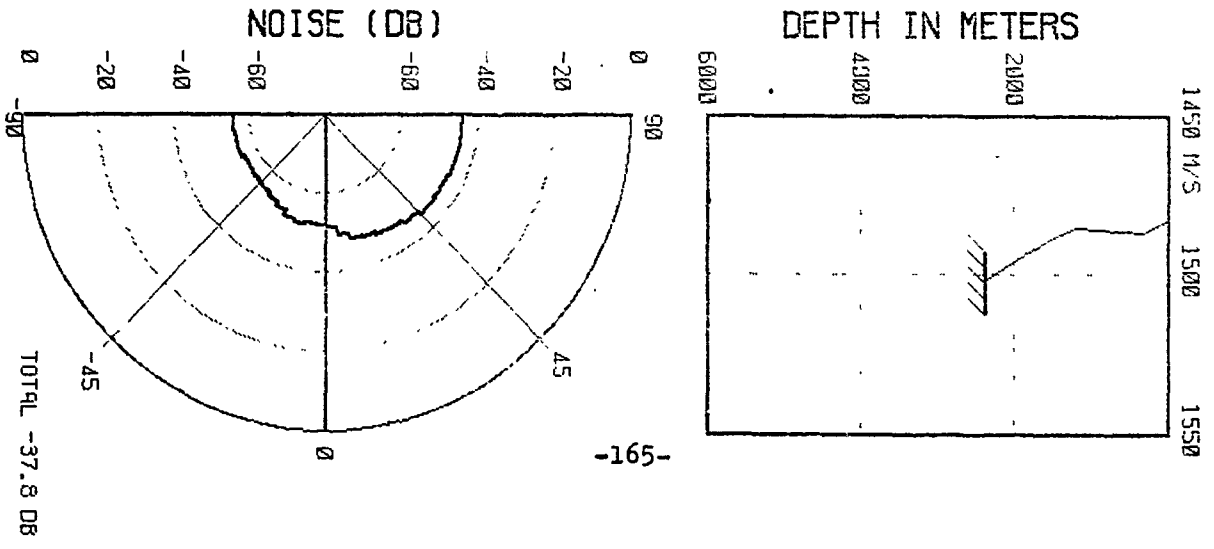
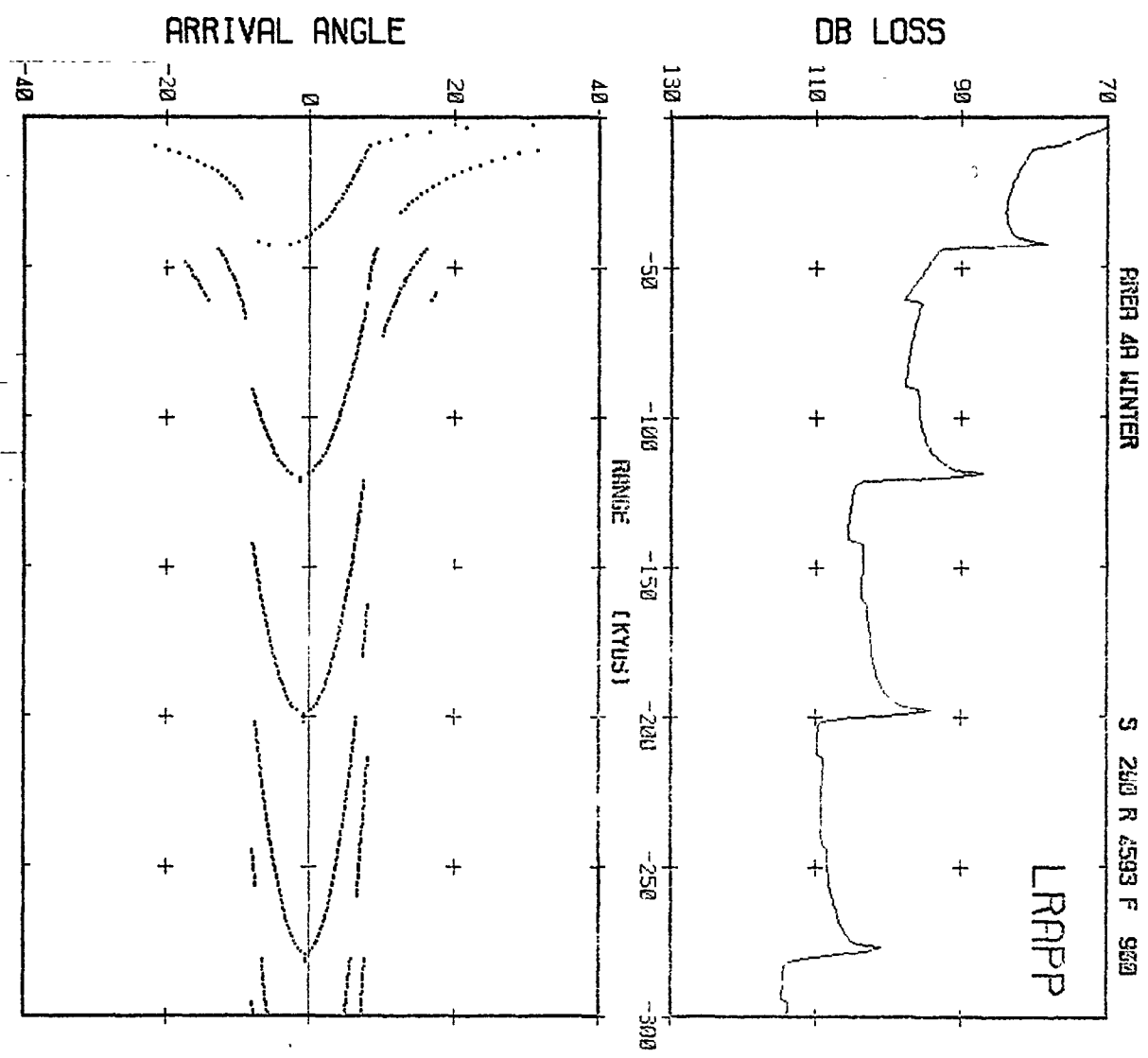
TOTAL -37.8 DB









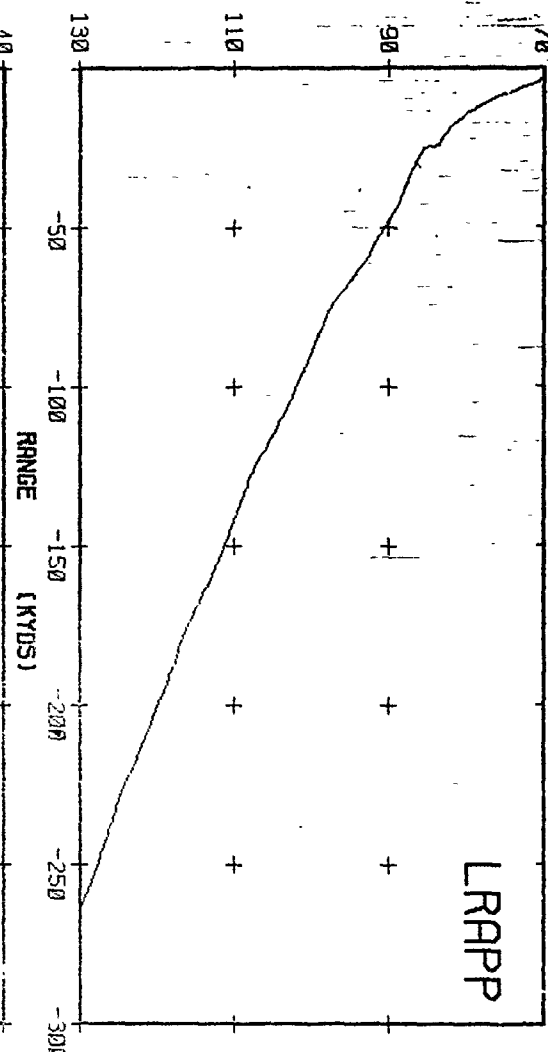


PER 4R WINTER

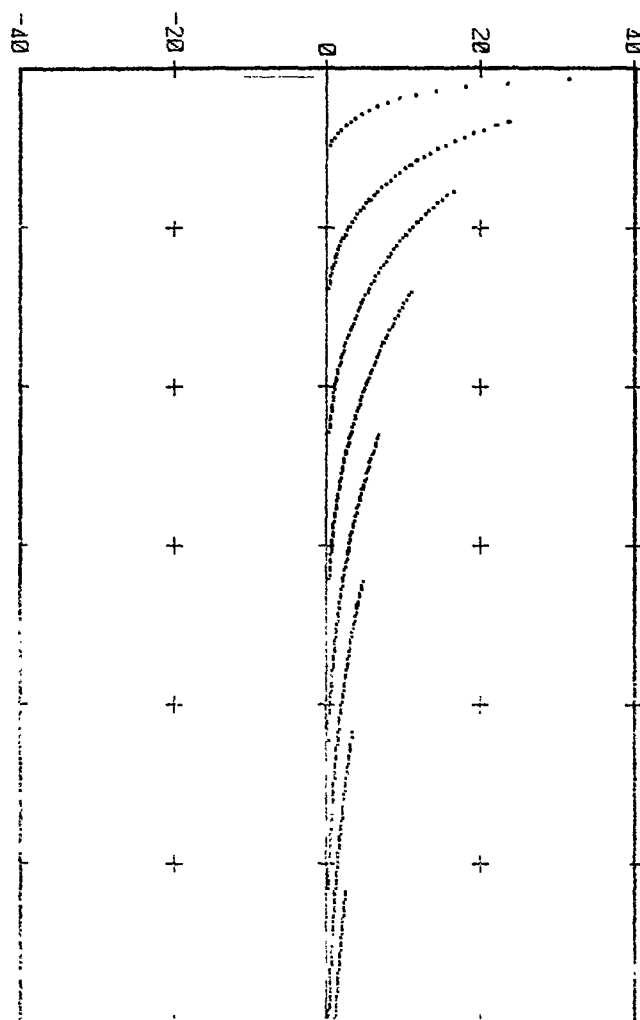
S 20 R 798 F 900

LRAPP

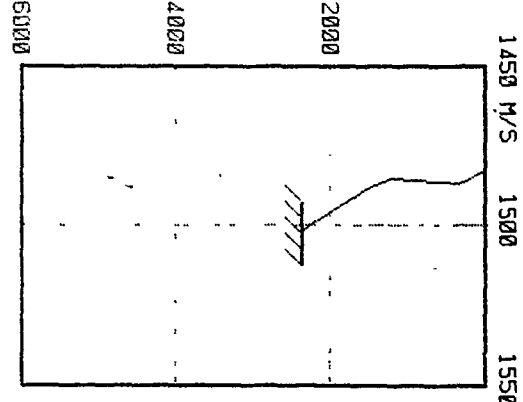
DB LOSS



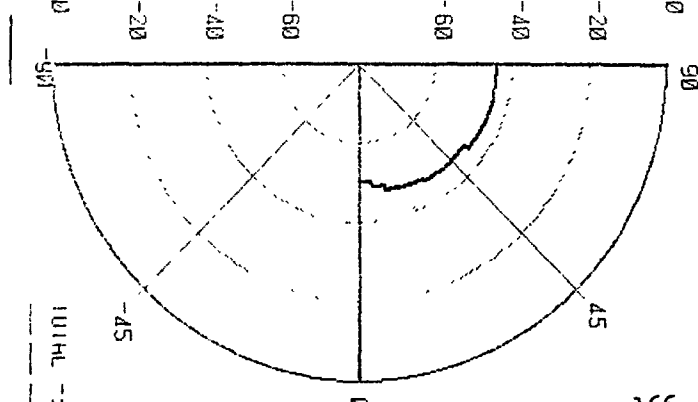
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

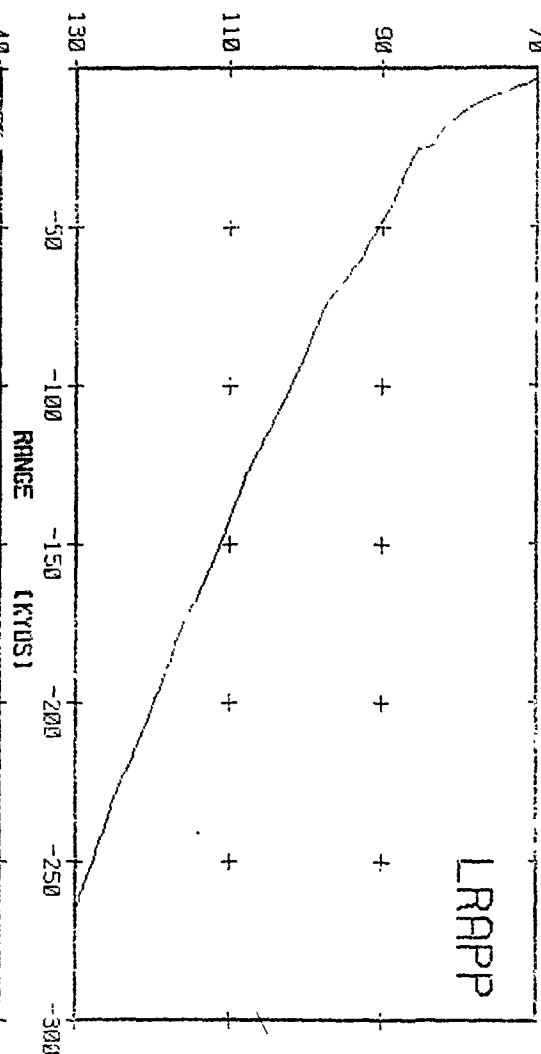


FROM AN HUNTER

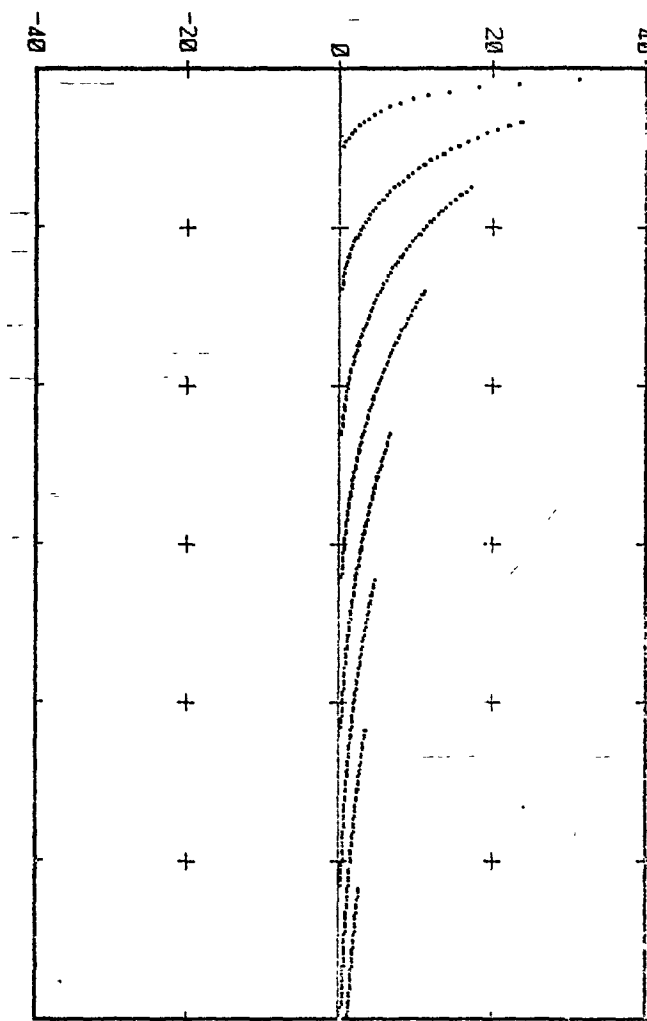
S 59 R 7750 F 969

1450 M/S 1500 1550

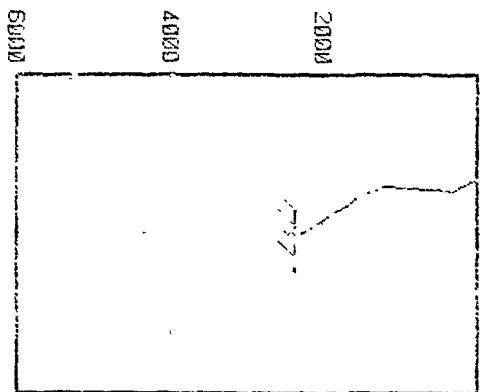
DB LOSS



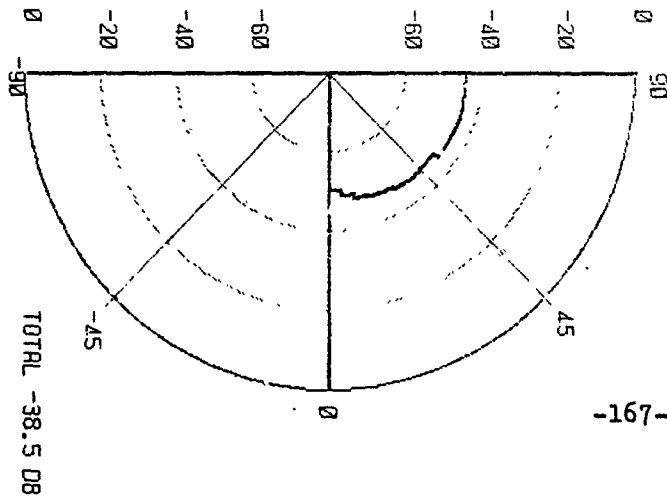
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



AREA AIR WINTER

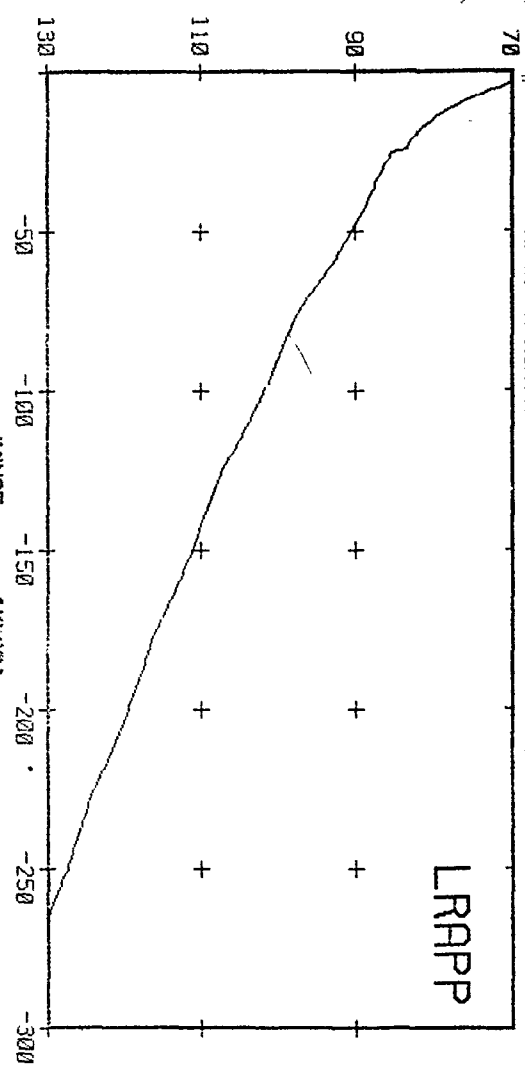
S 200 R 7798 F 900

1450 M/S

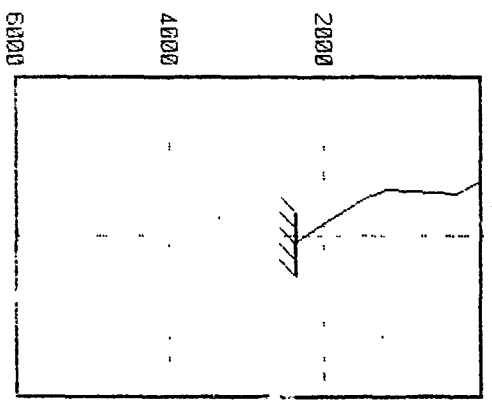
1500

1550

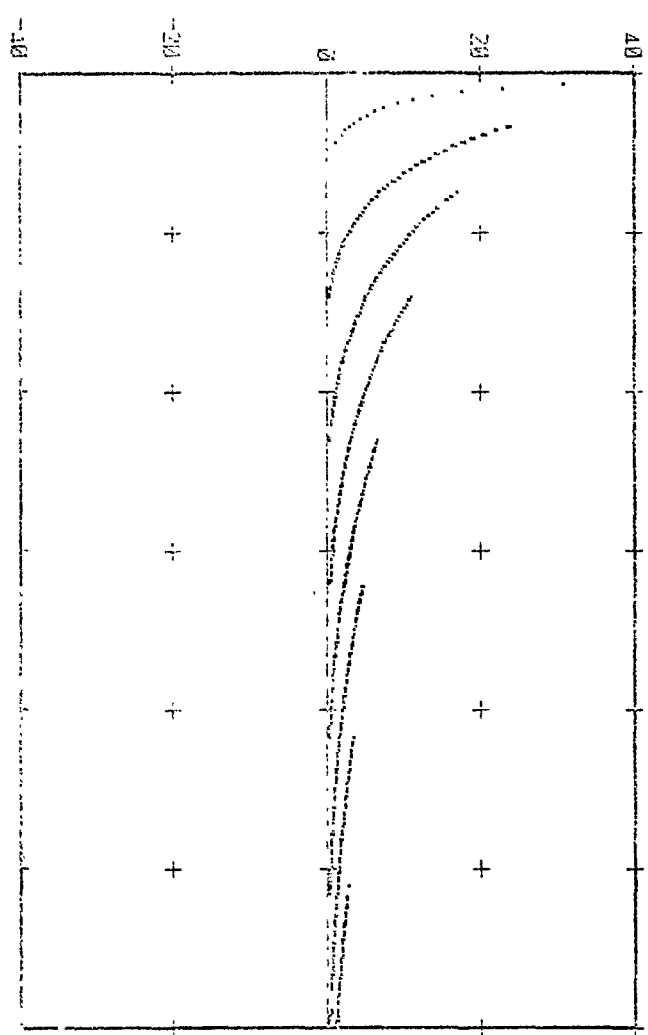
DB LOSS



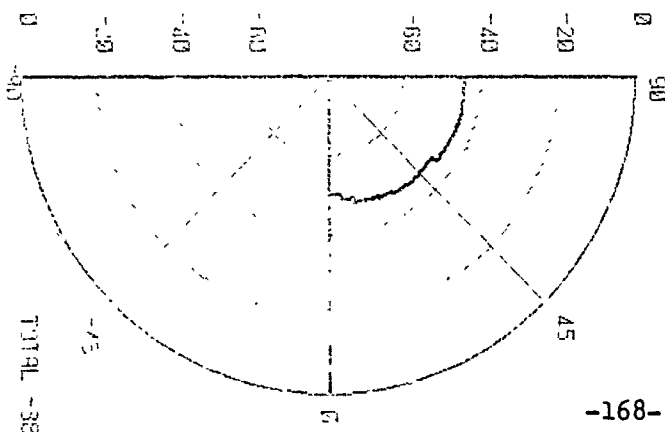
DEPTH IN METERS

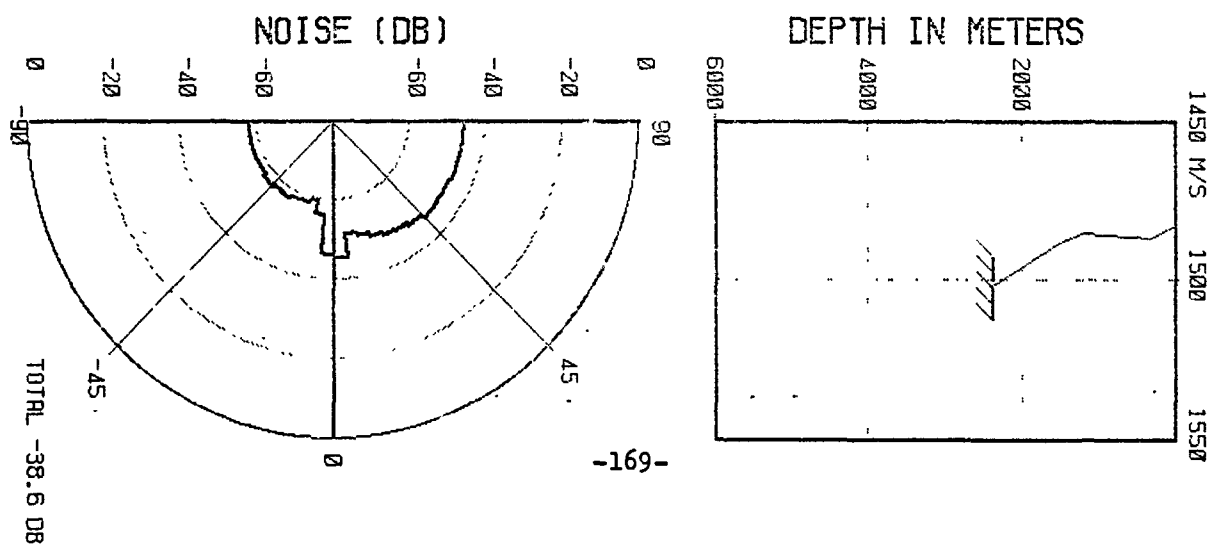
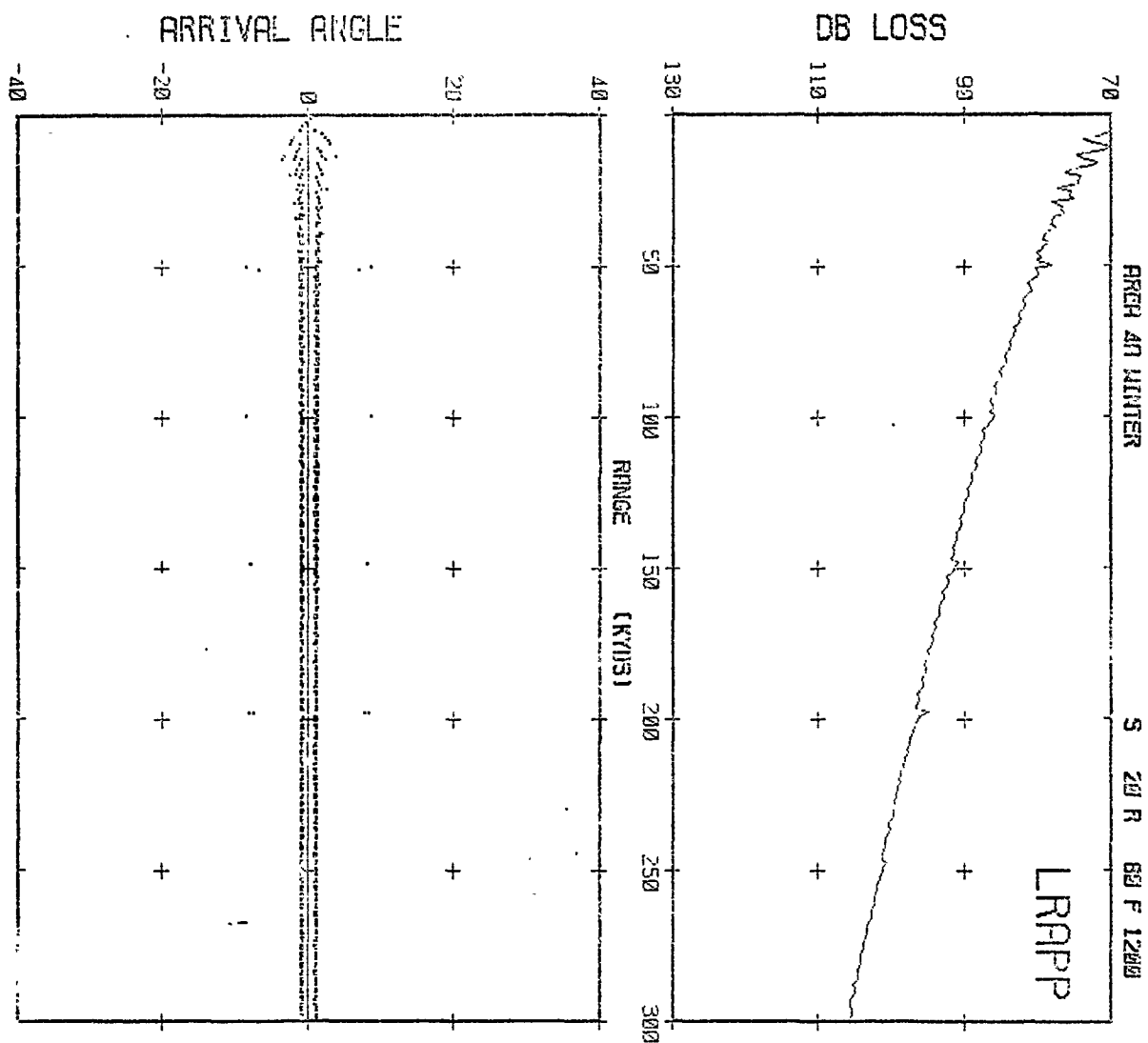


ARRIVAL ANGLE



NOISE (DB)



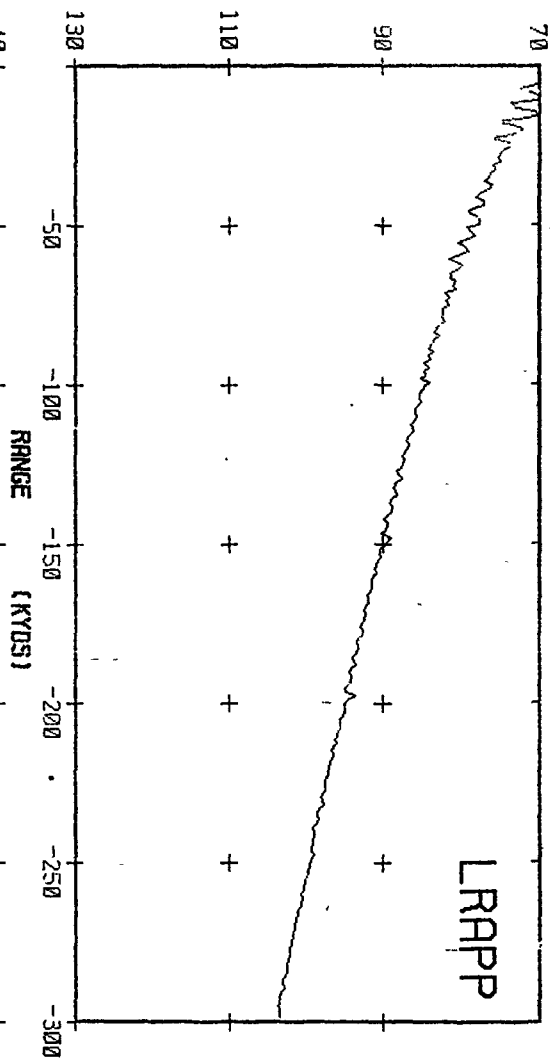


AREA AIR WINTER

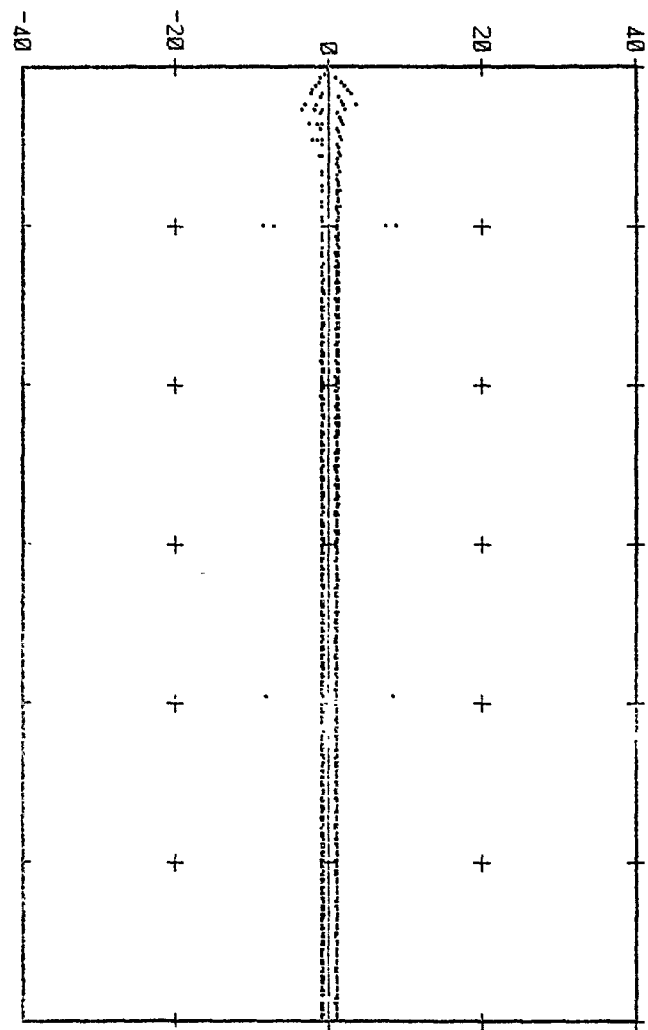
S 50 R 60 F 1200

1450 H/S 1500 1550

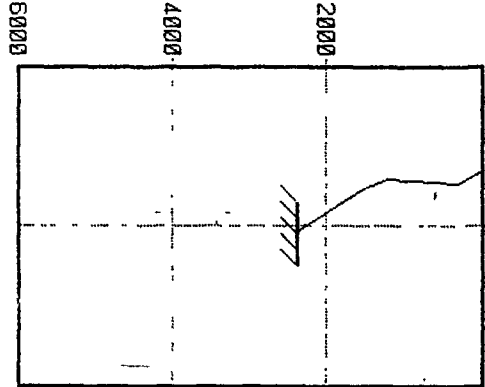
DB LOSS



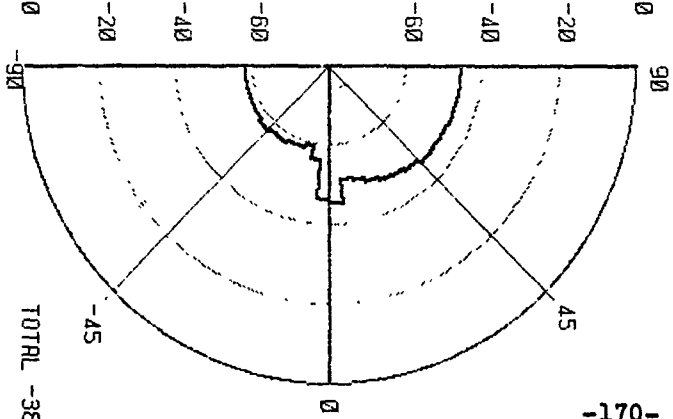
ARRIVAL ANGLE



DEPTH IN METERS

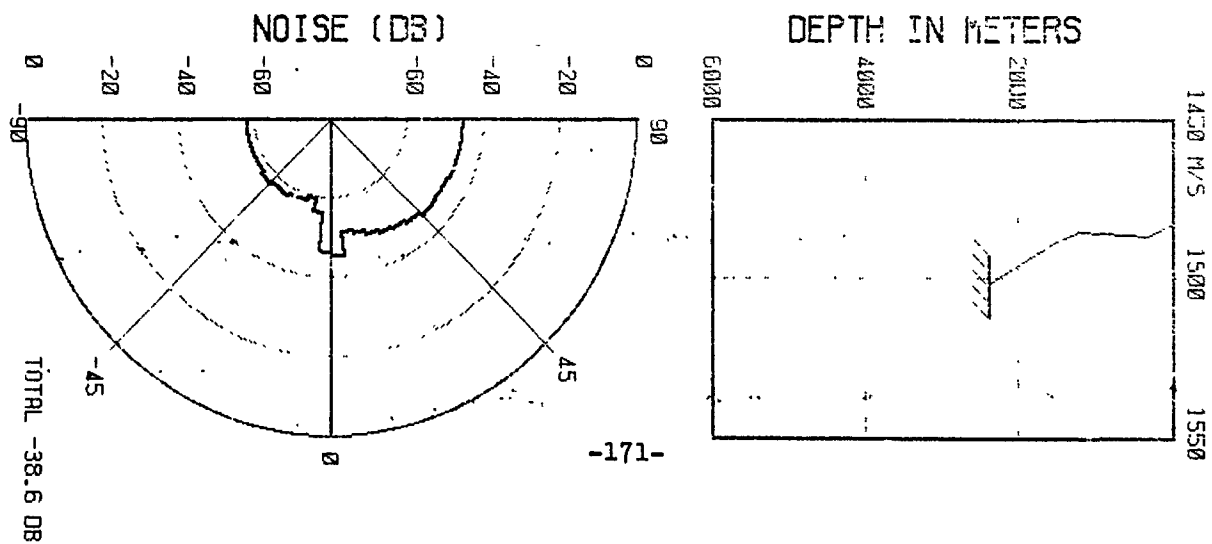
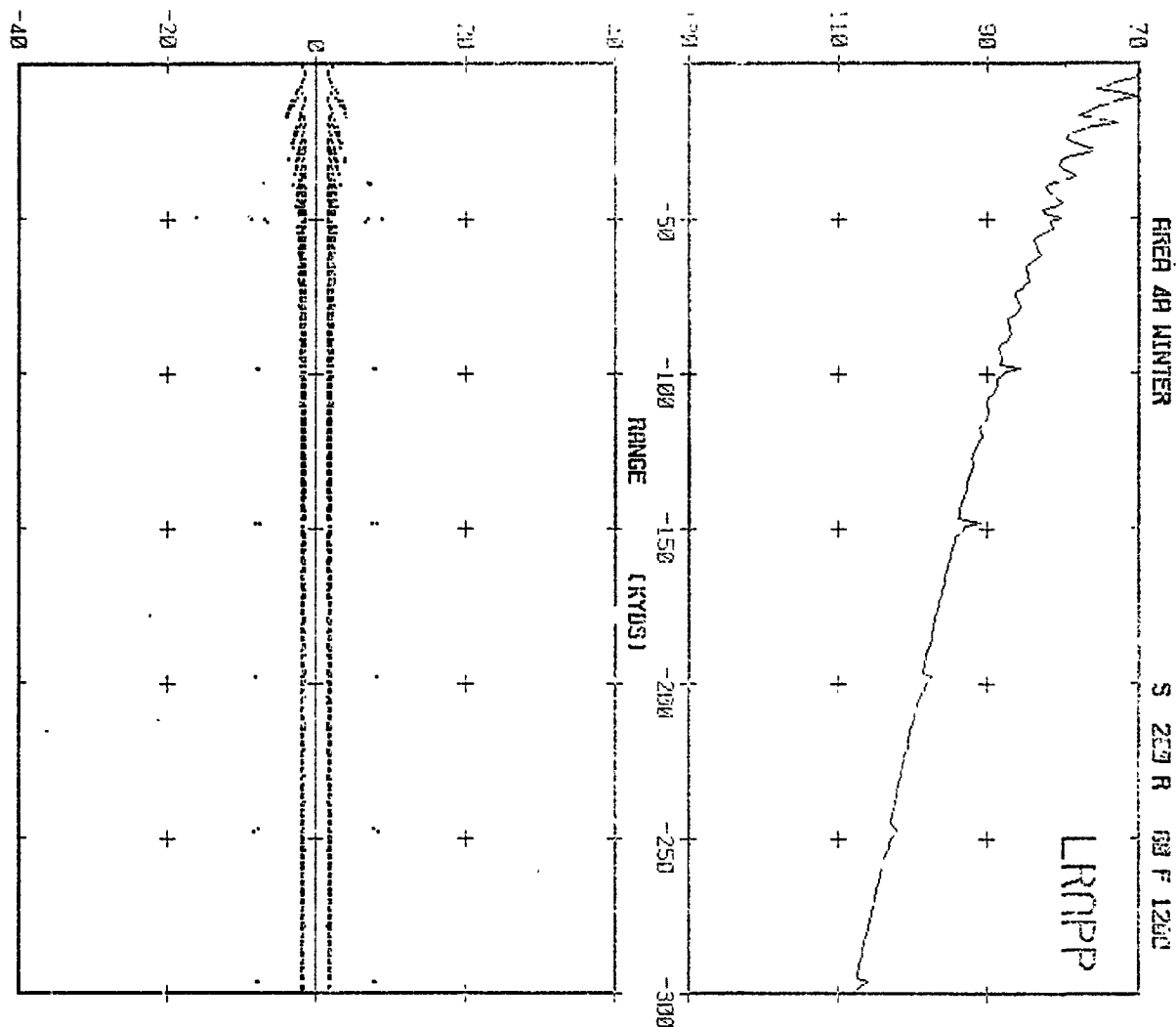


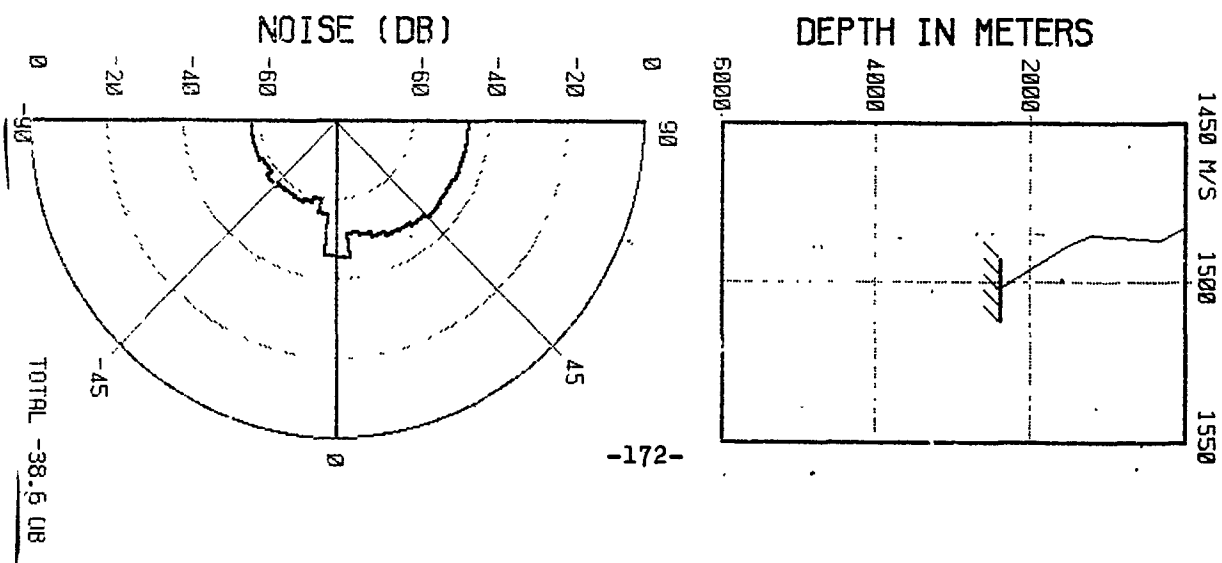
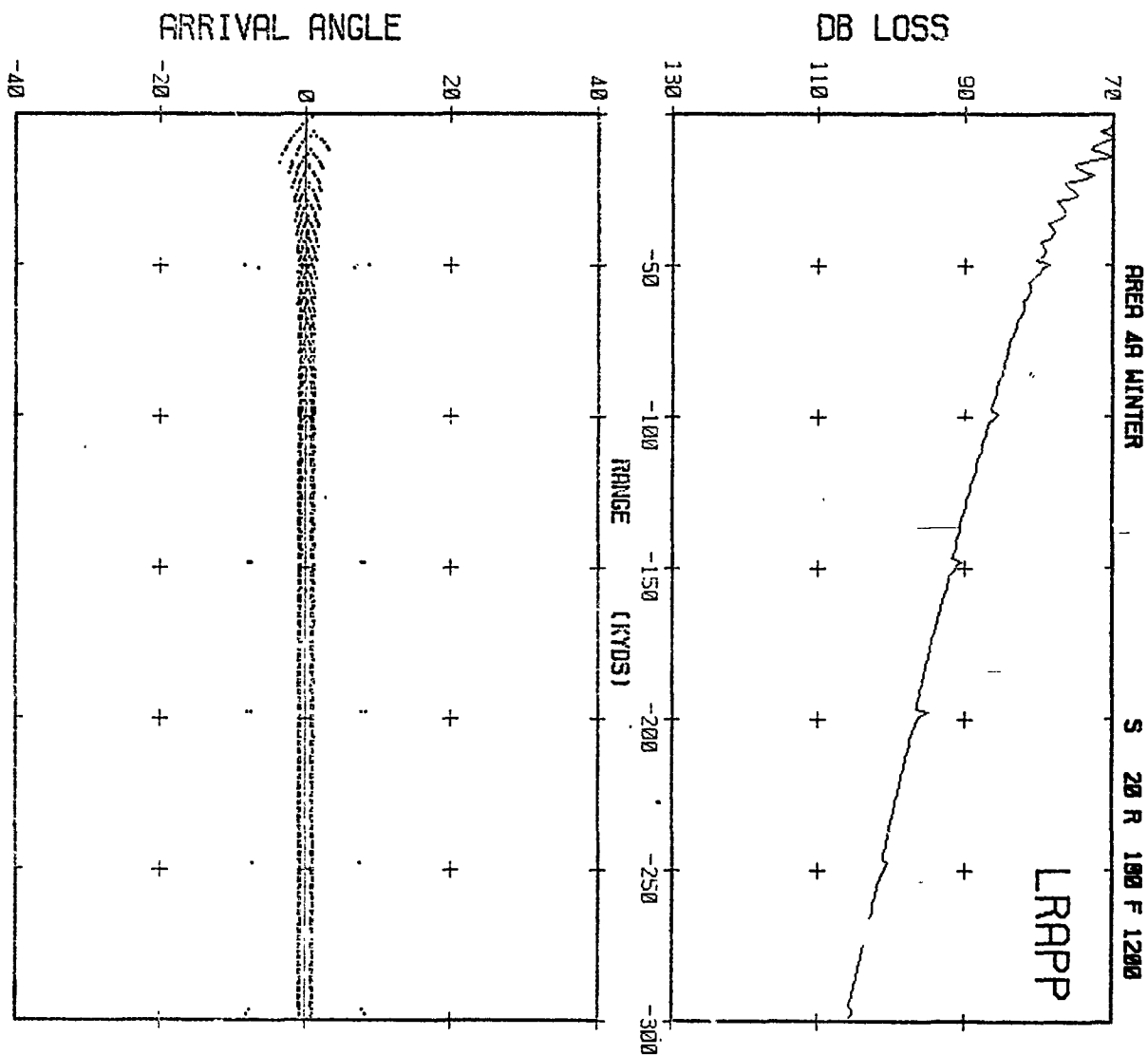
NOISE (DB)

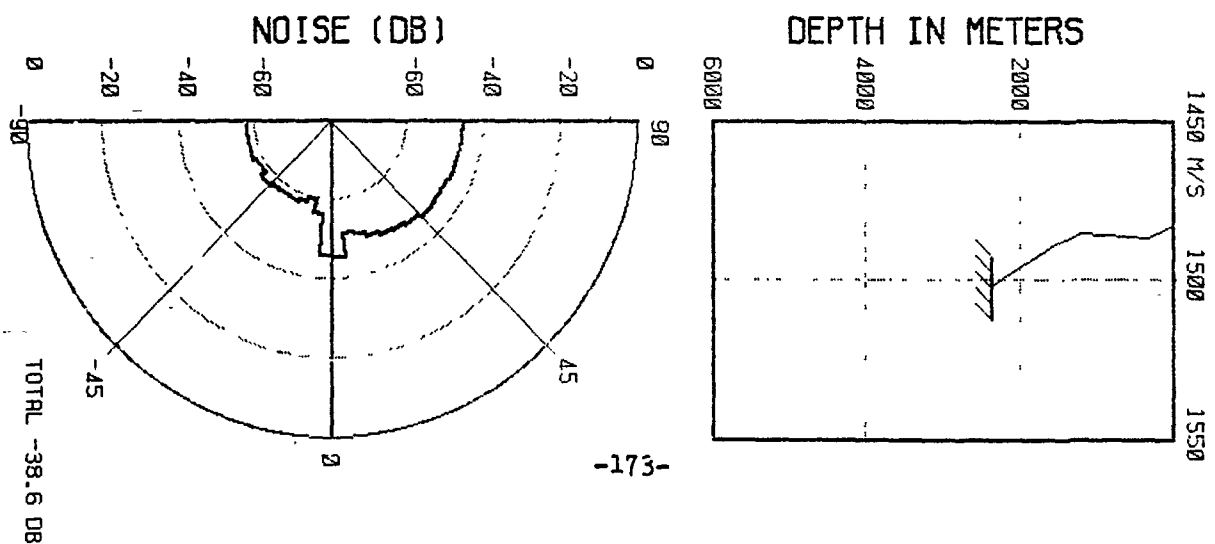
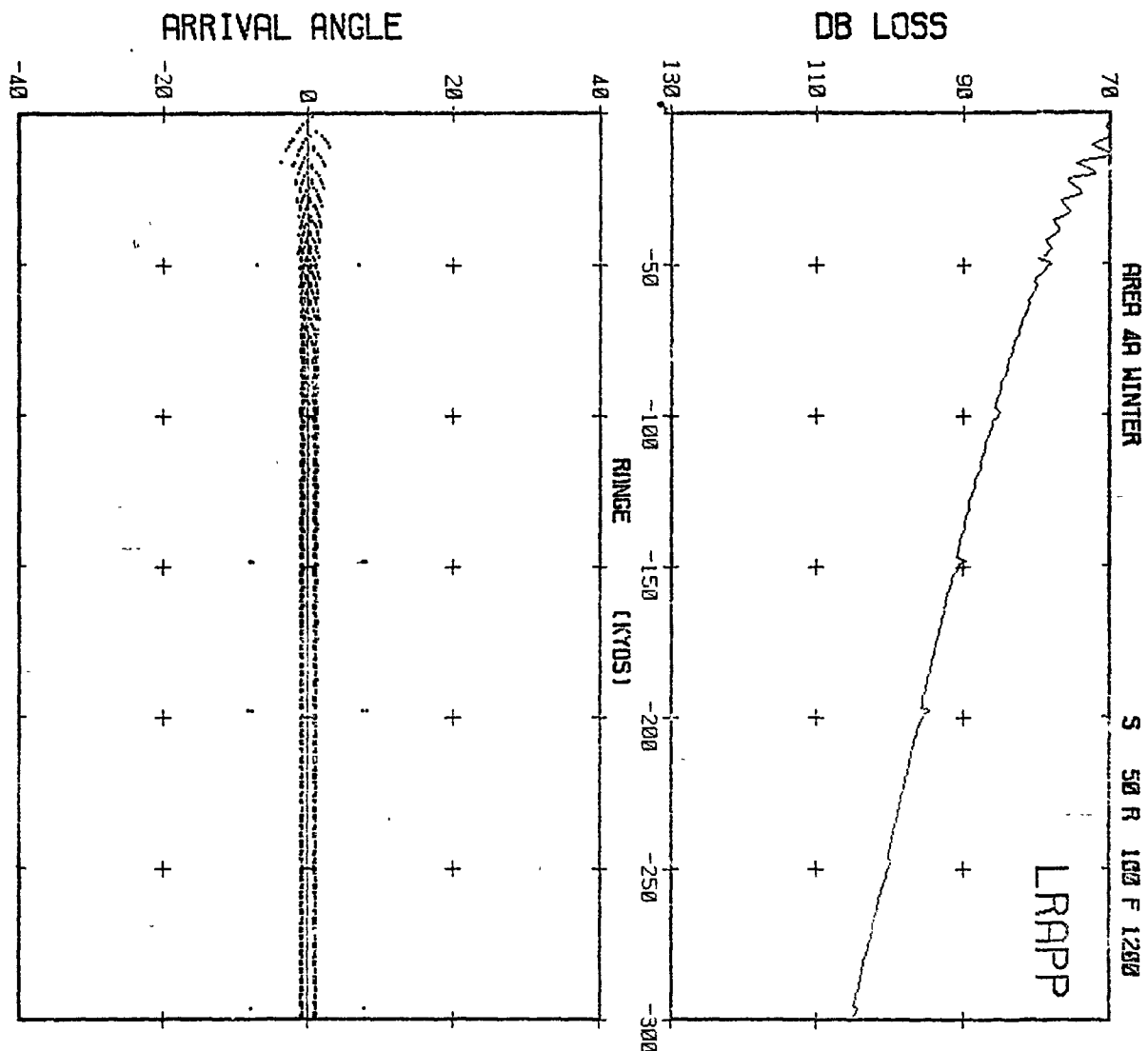


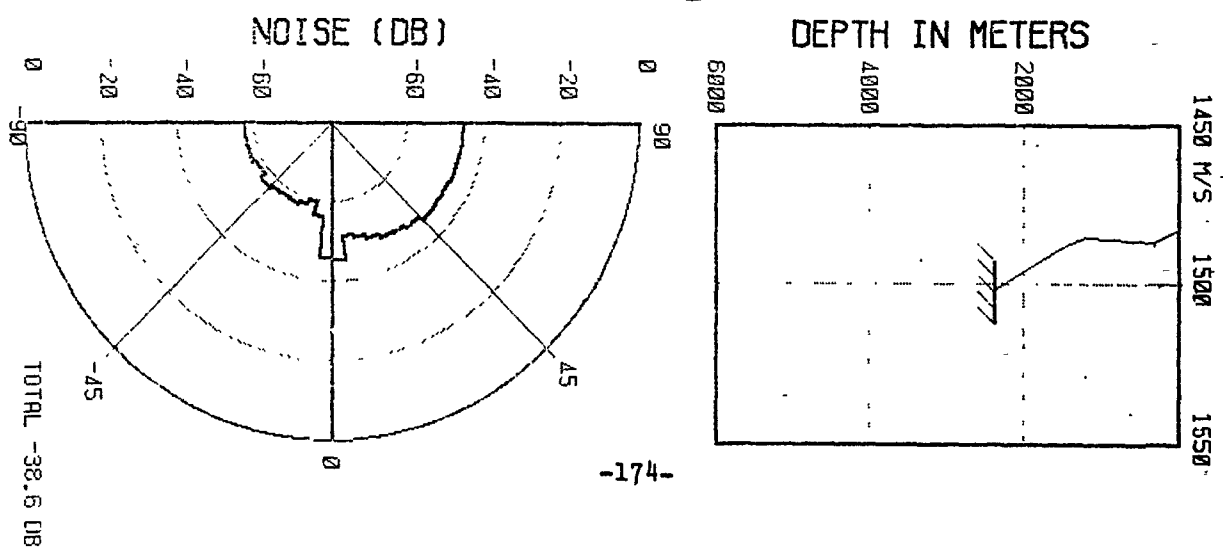
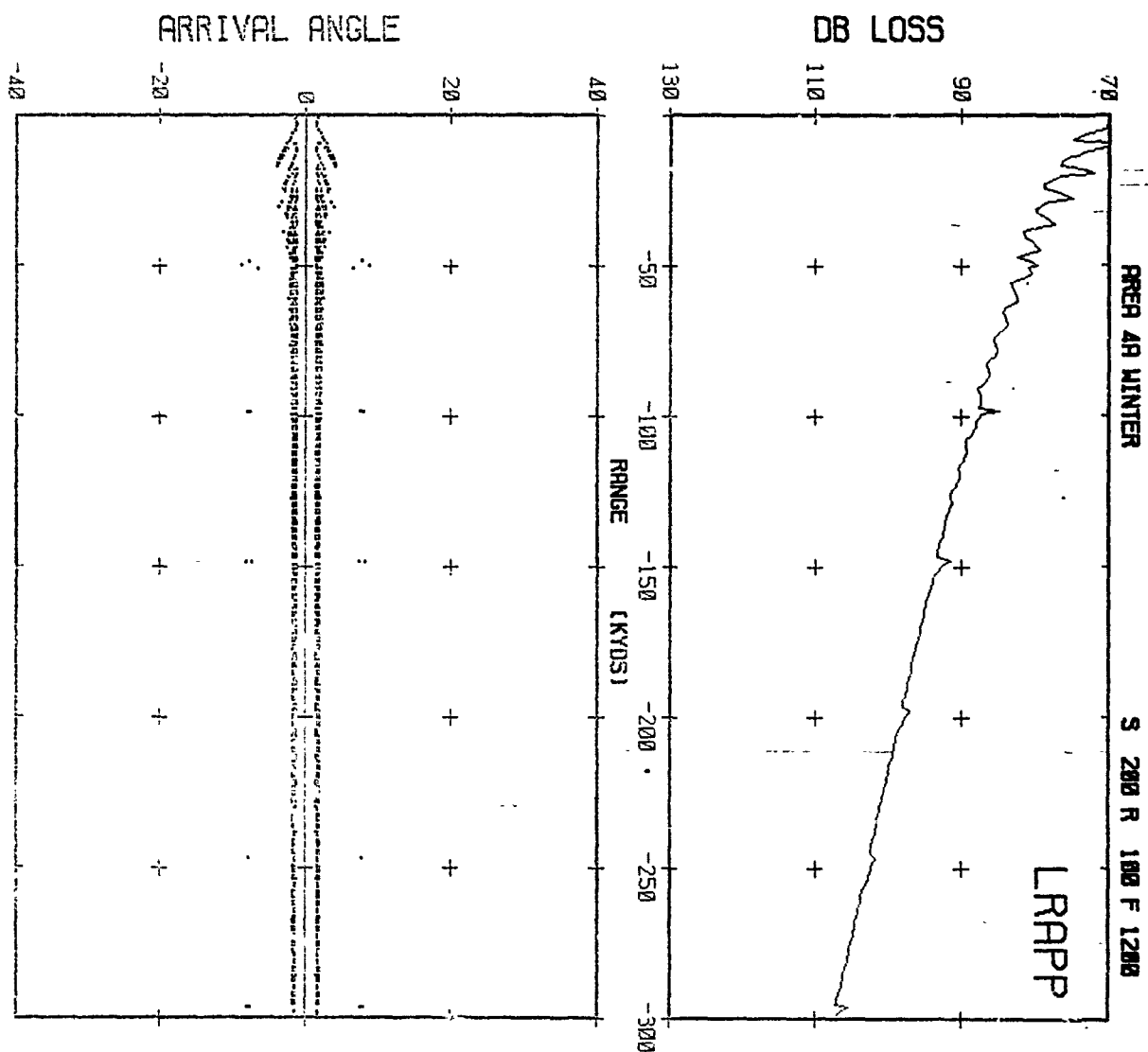
TOTRL -38.6 DB

SAKIMPL FIG. 2

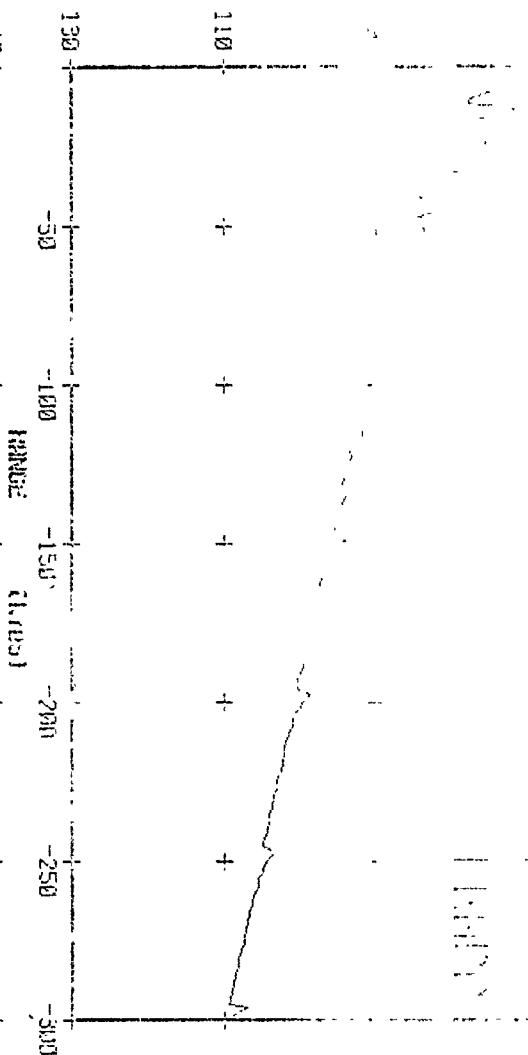




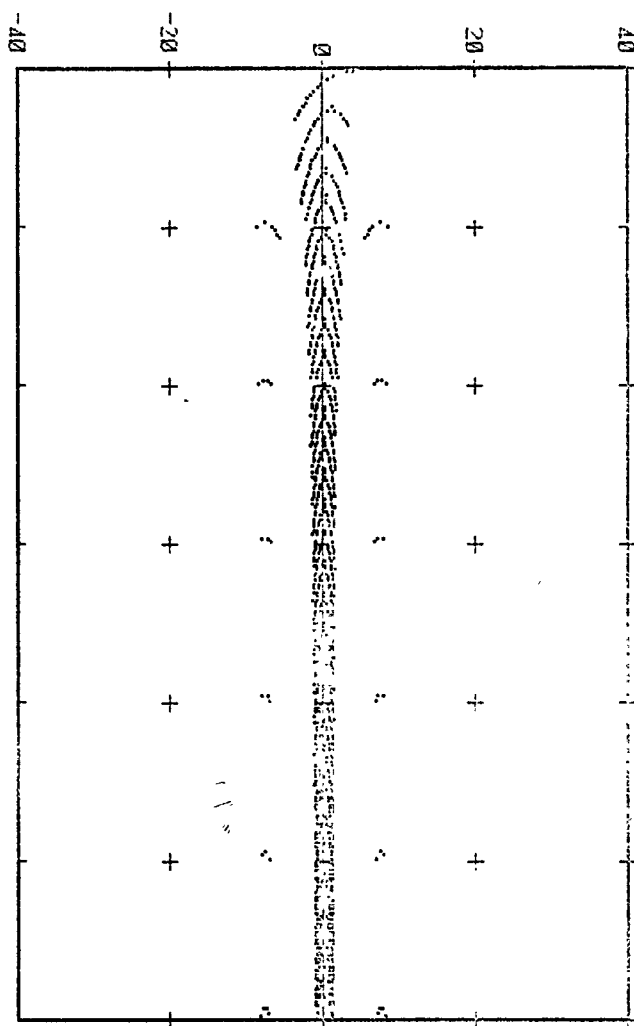




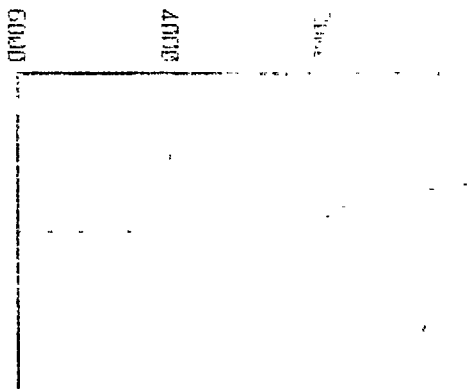
DB LOSS



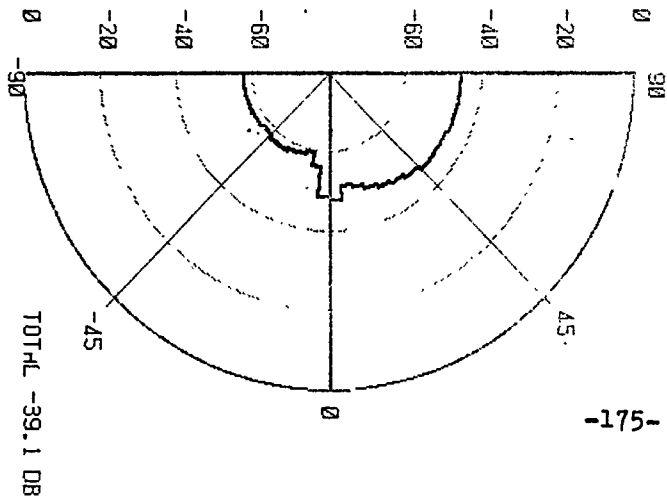
ARRIVAL ANGLE



DEPTH IN FATHOMS



NOISE (DB)

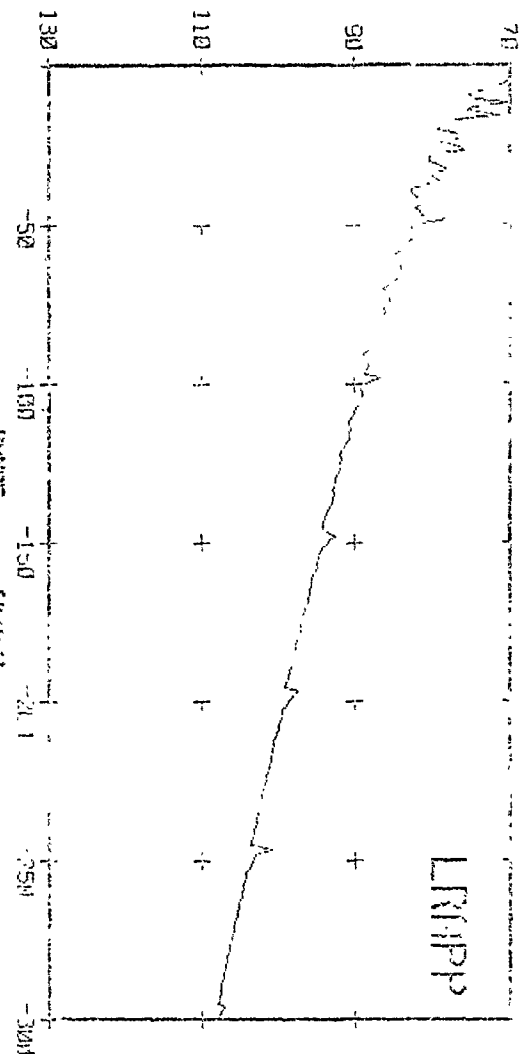


1500 H 21 0000

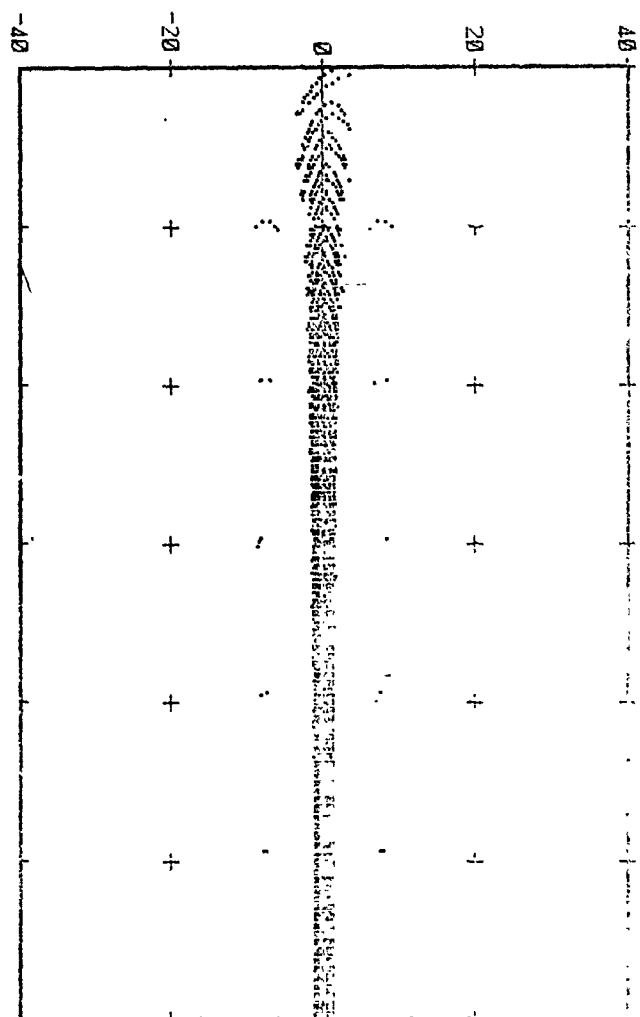
S 260 R 300 F 1200

LRIPP

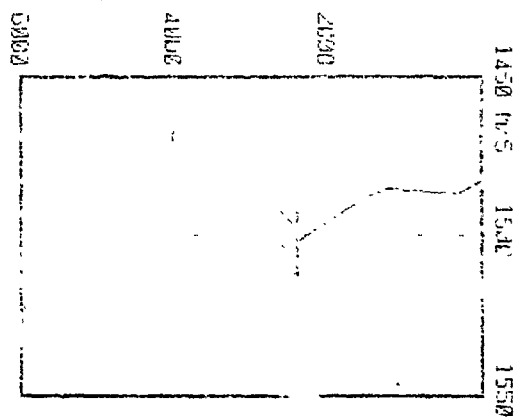
DB LOSS



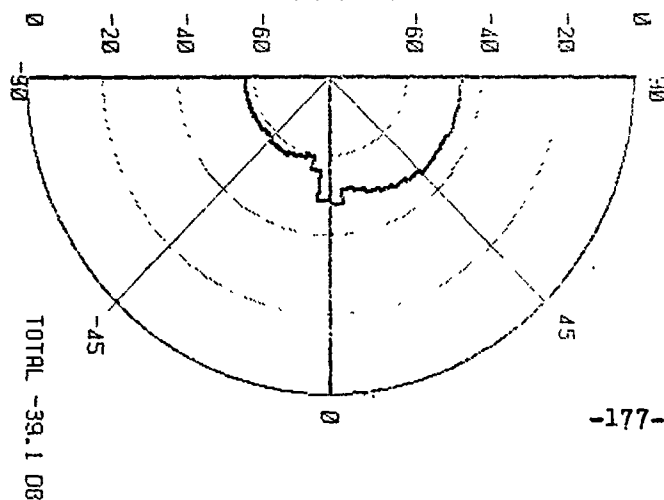
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



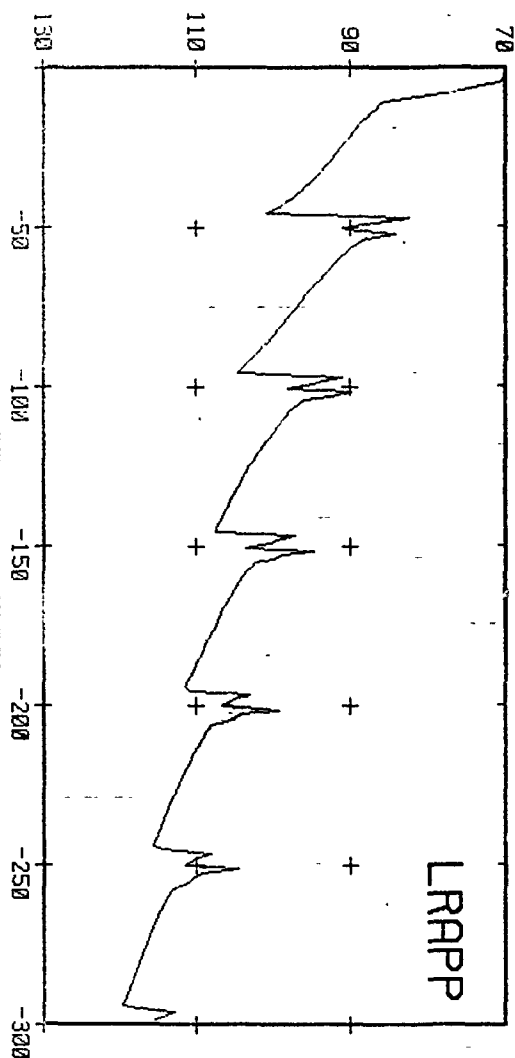
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PRER APR WINTER

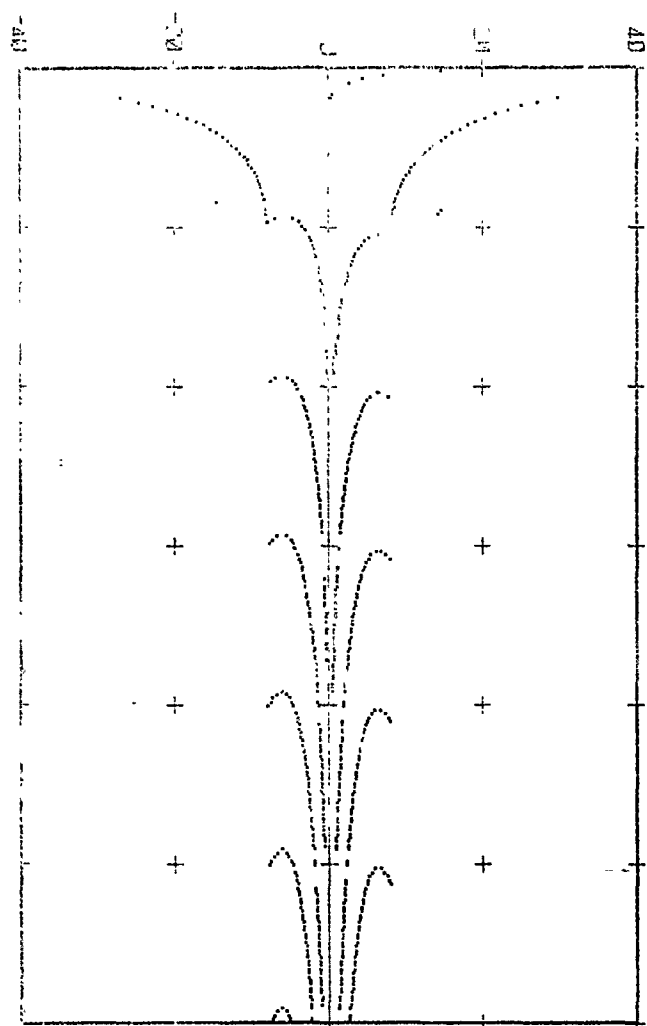
S 20 R 1000 F 1200

LRAPP

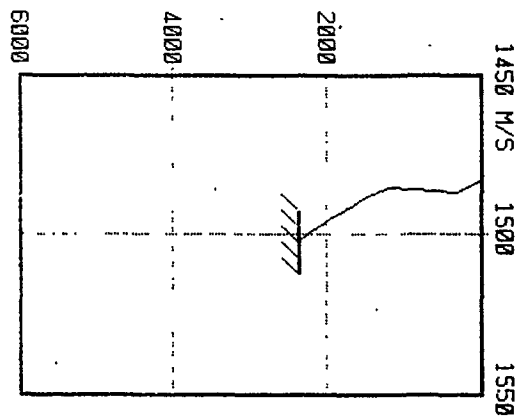
DB LOSS



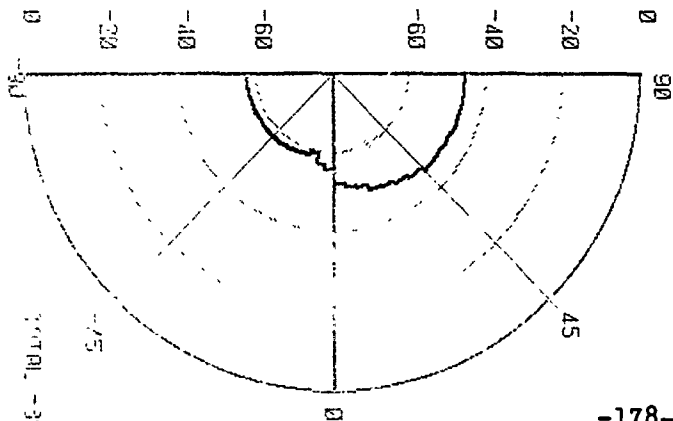
ARRIVAL ANGLE

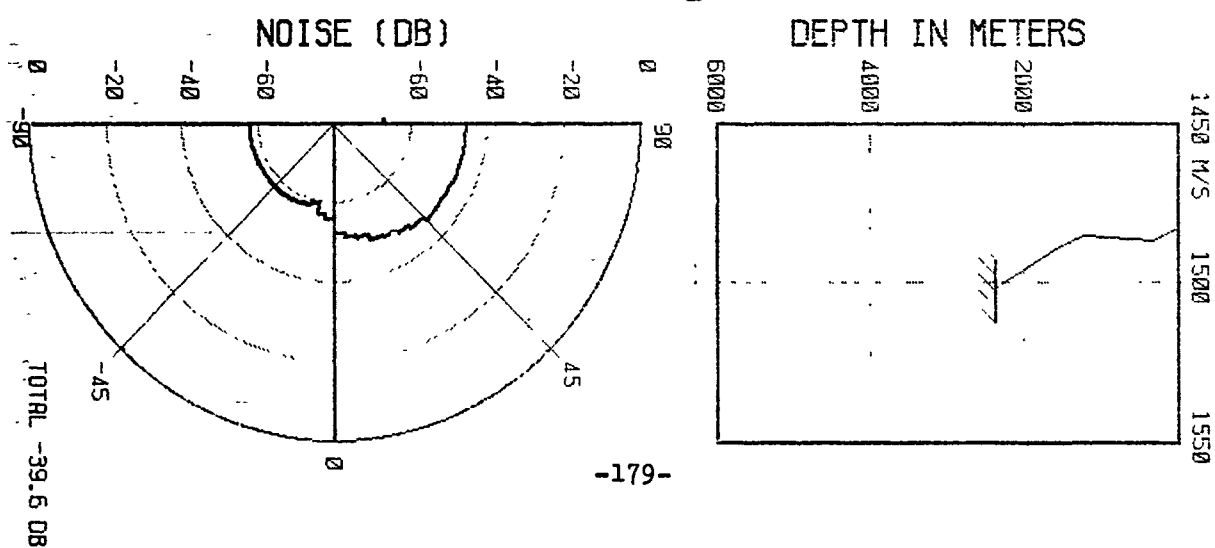
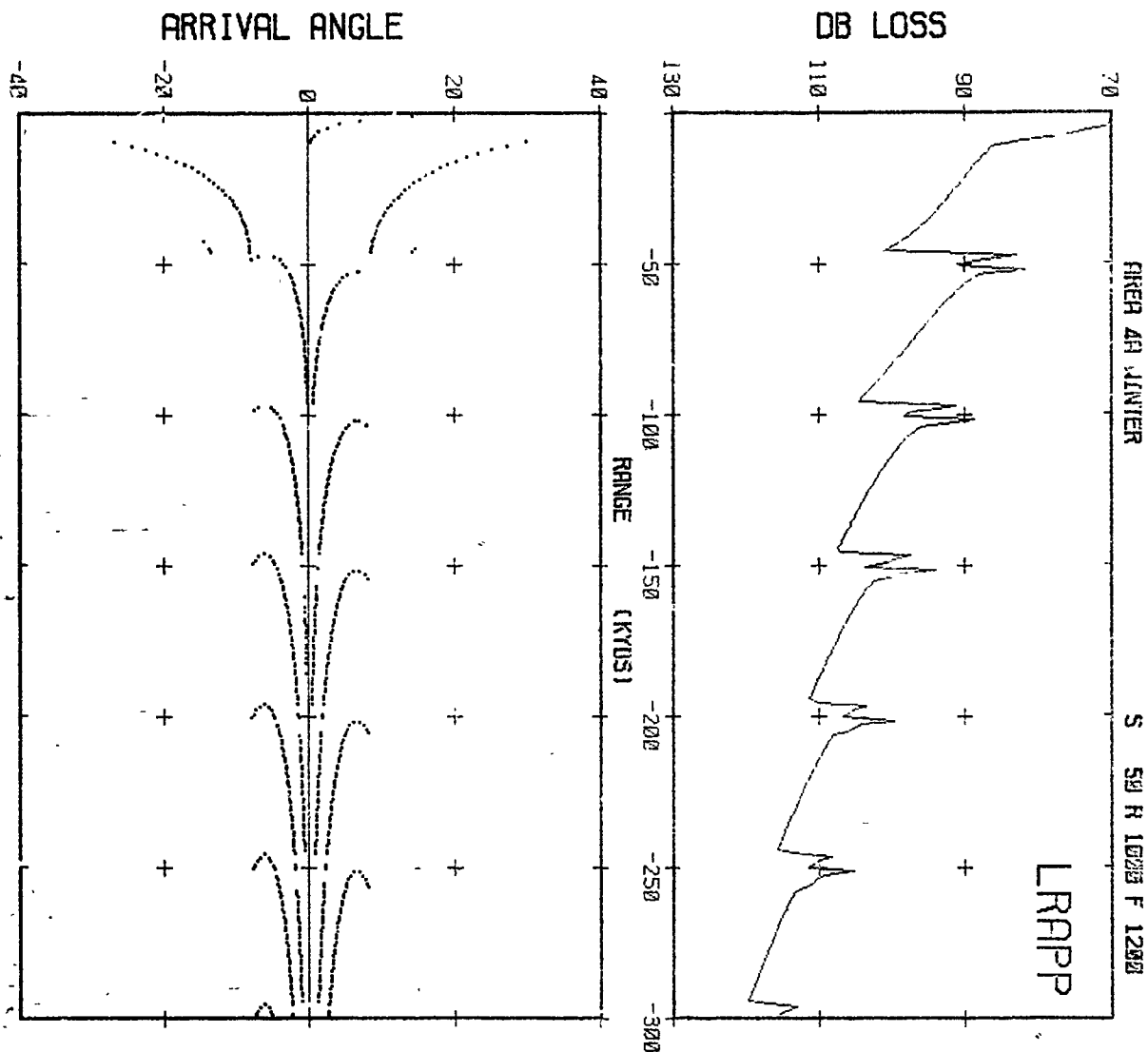


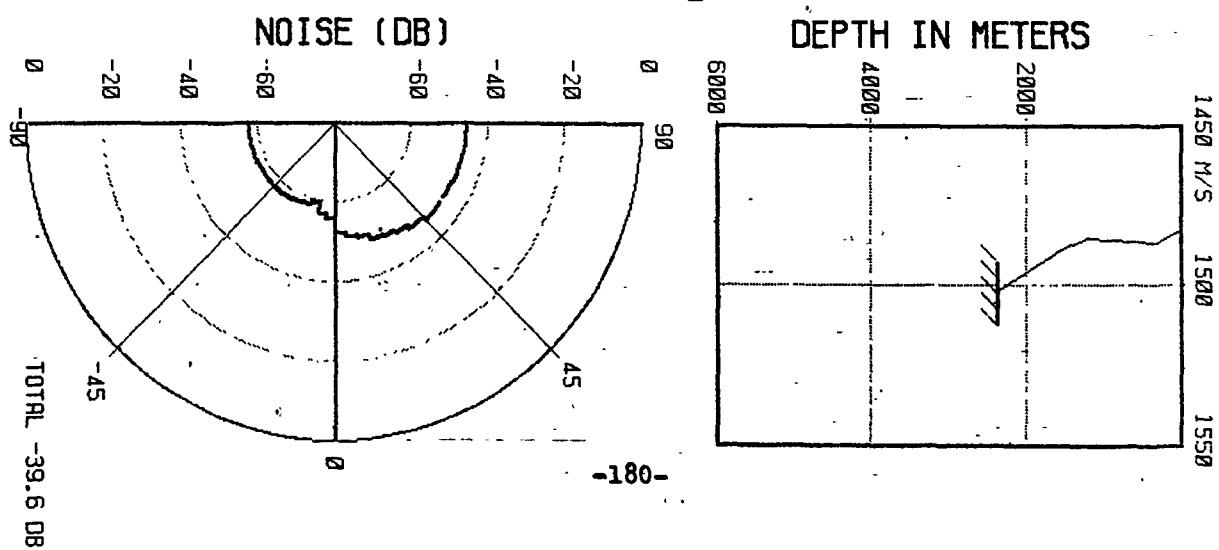
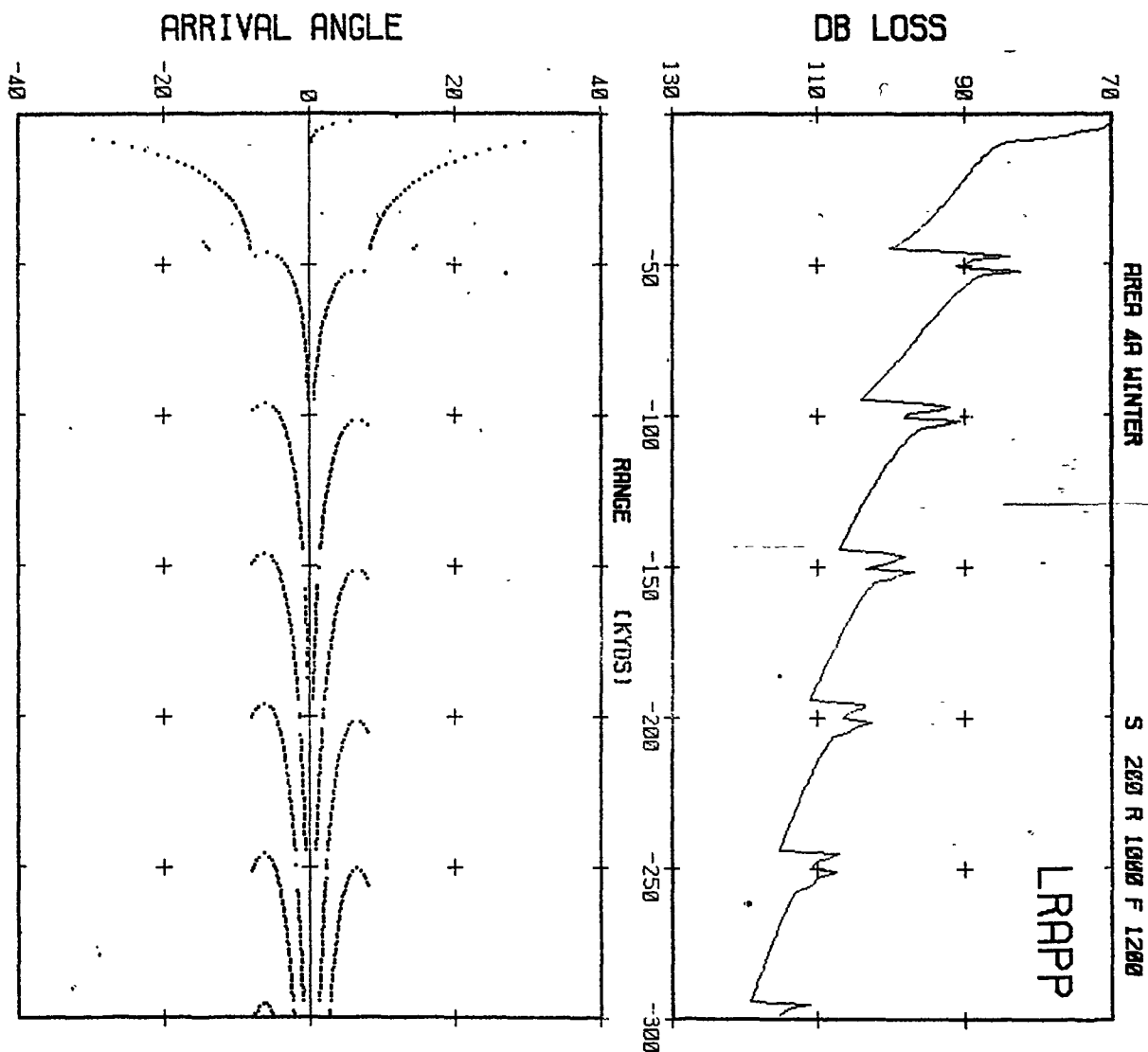
DEPTH IN METERS



NOISE (DB)





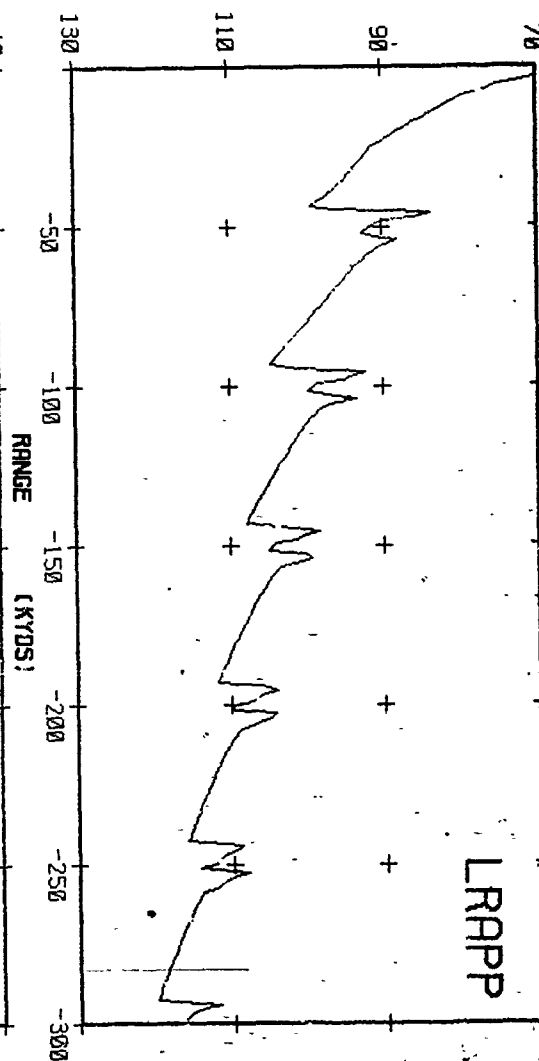


AREA 4R WINTER

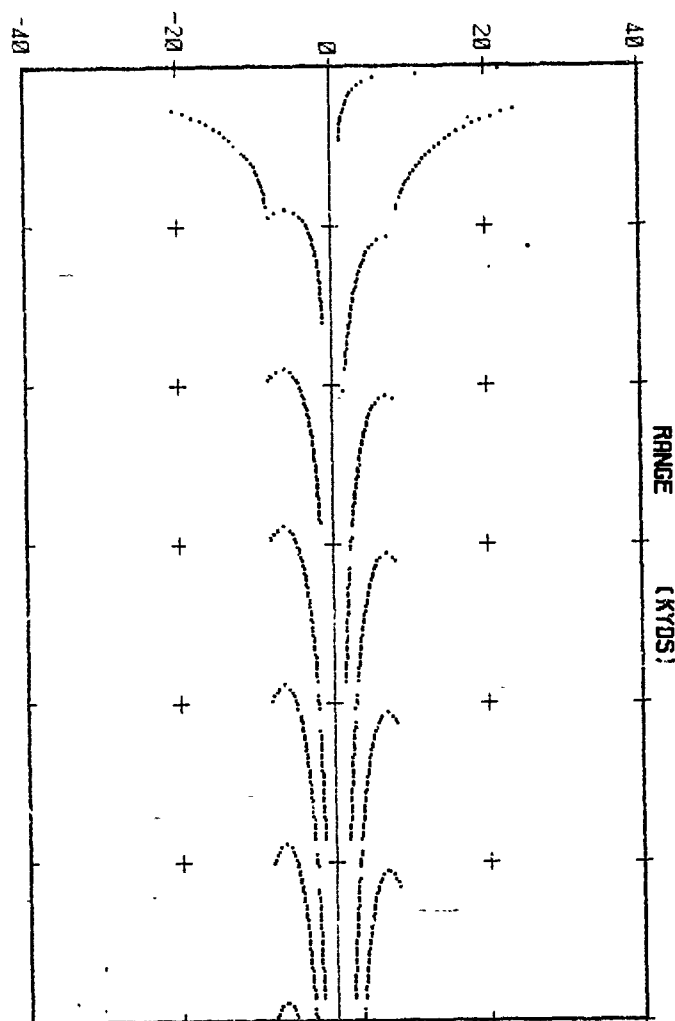
5 20 R 1500 + 1200

1500 H/S 1500

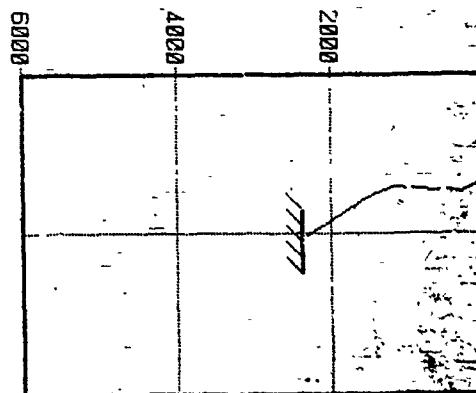
DB LOSS



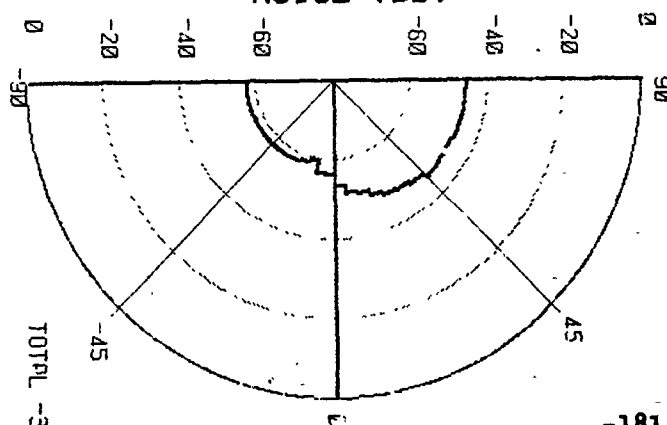
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



AREA 21 WINTER

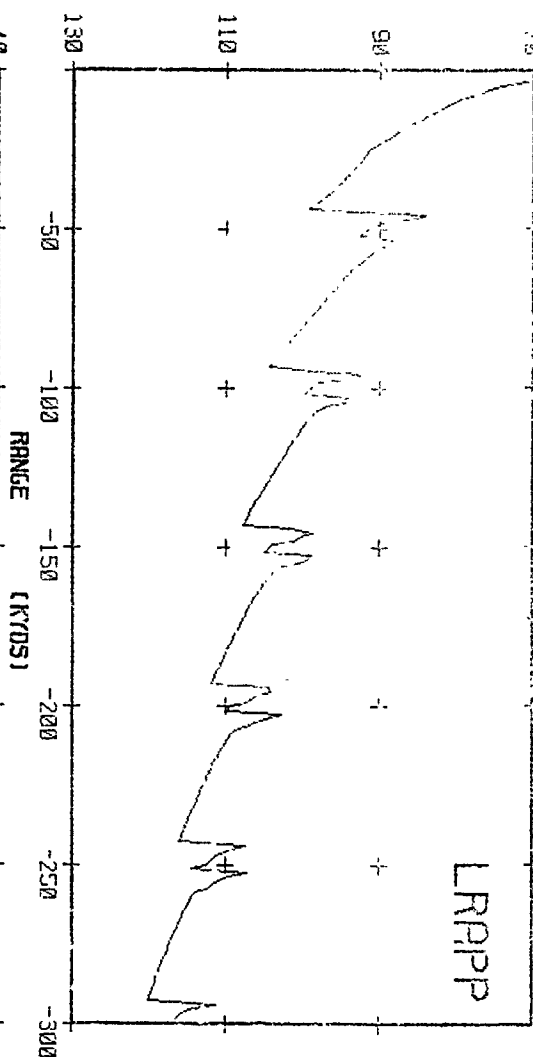
S 50 R 1505 F 1200

1452 N/S

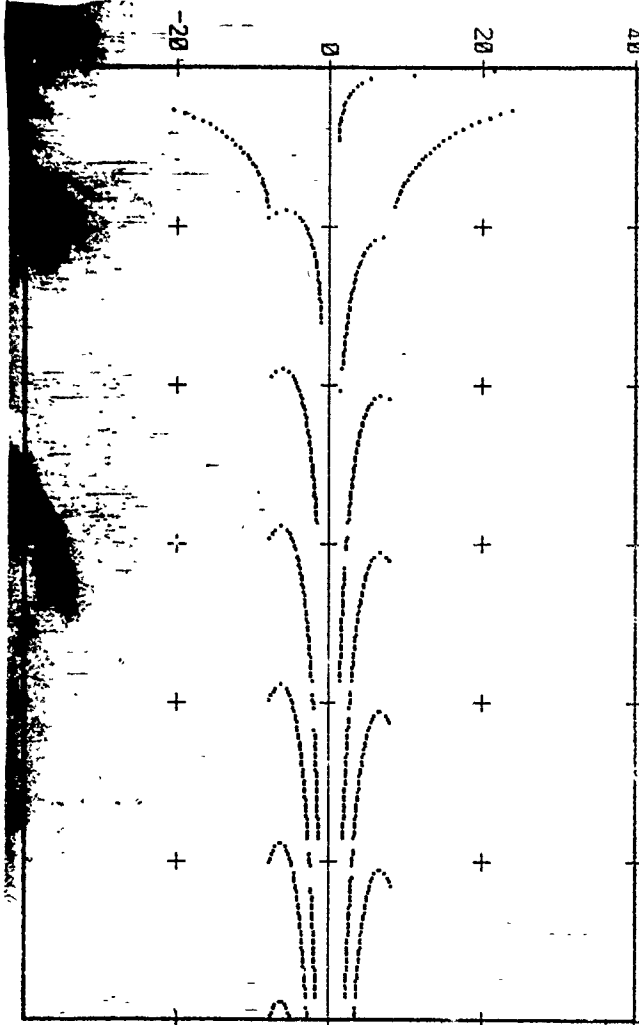
1500

1550

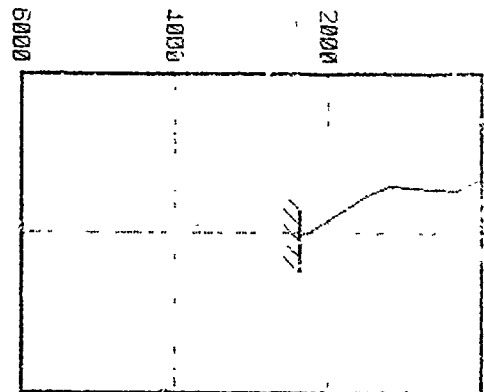
DB LOSS



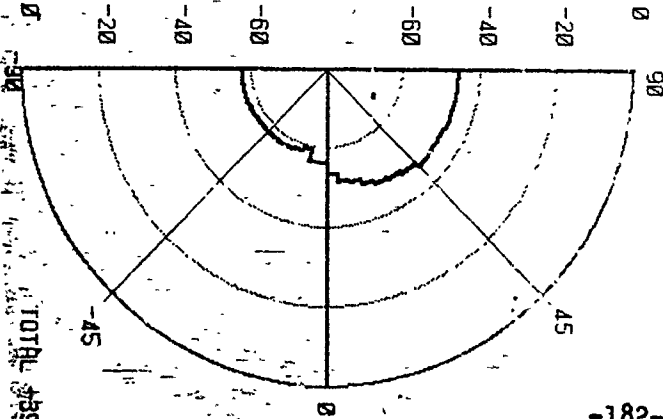
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

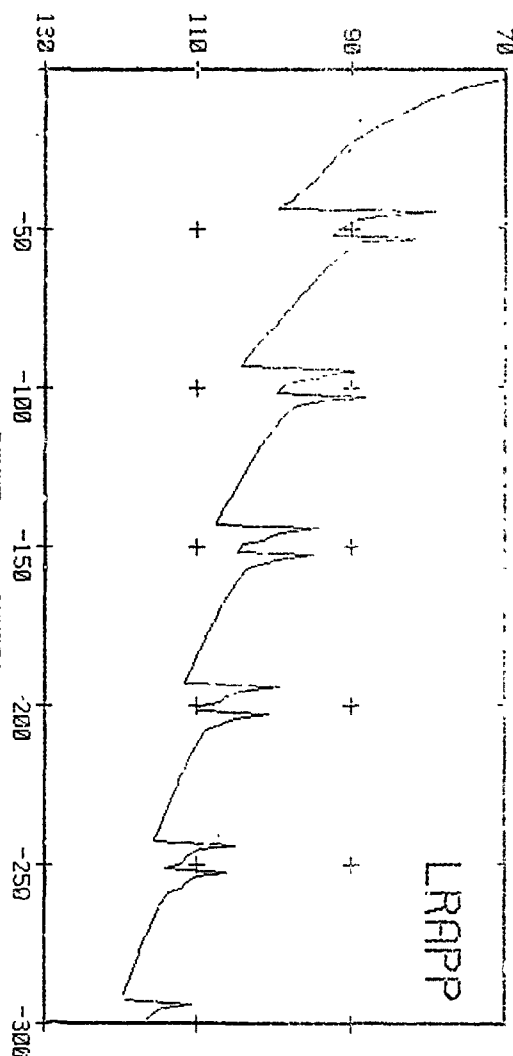


Page 401 M10101

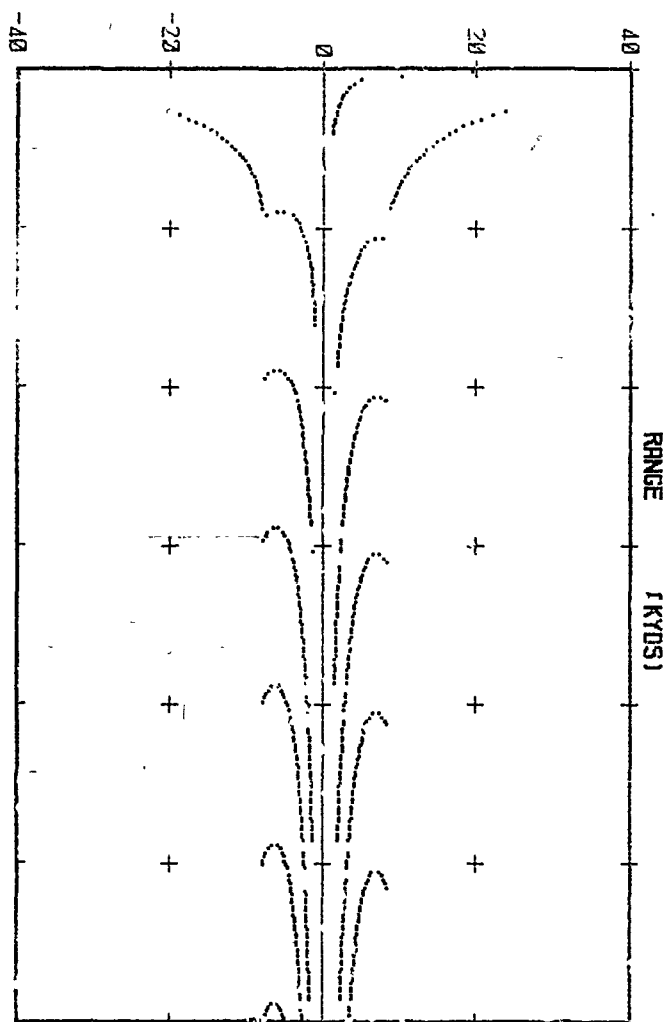
S 260 R 1503 F 1263

LRAPP

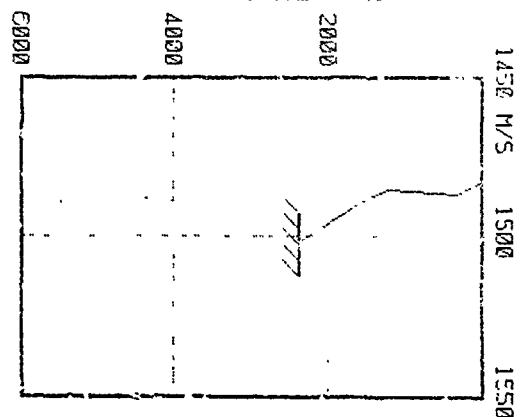
DB LOSS



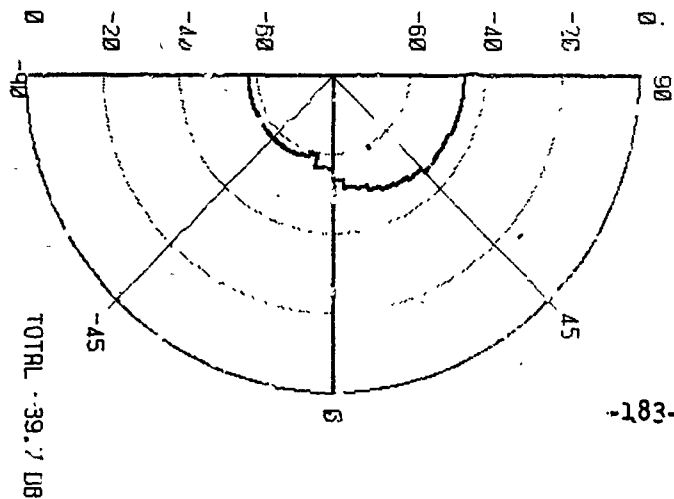
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

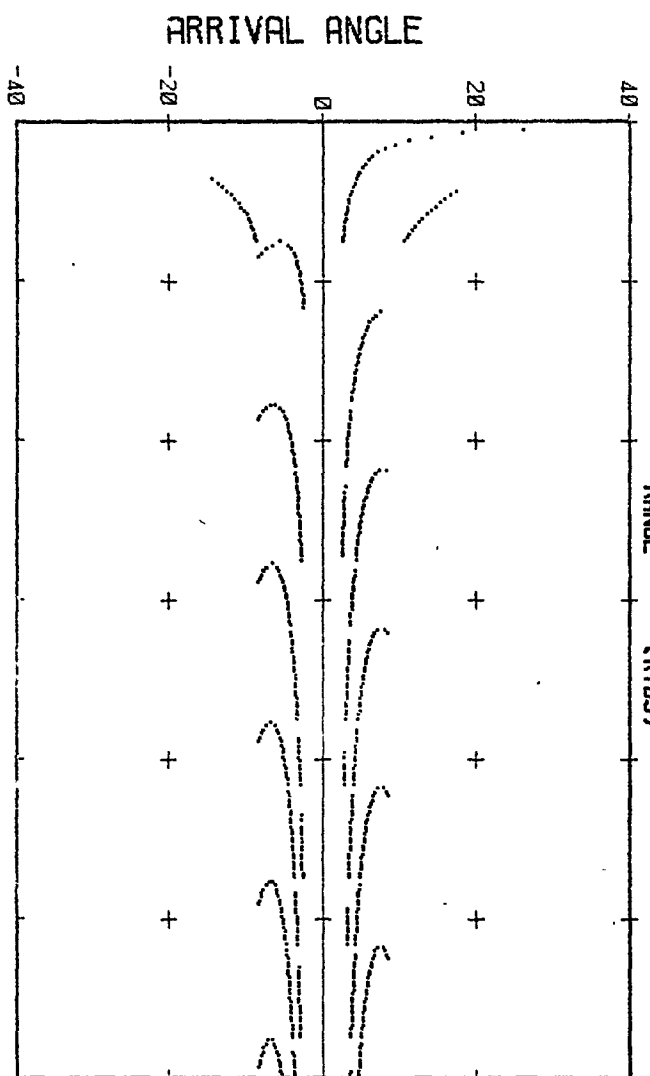
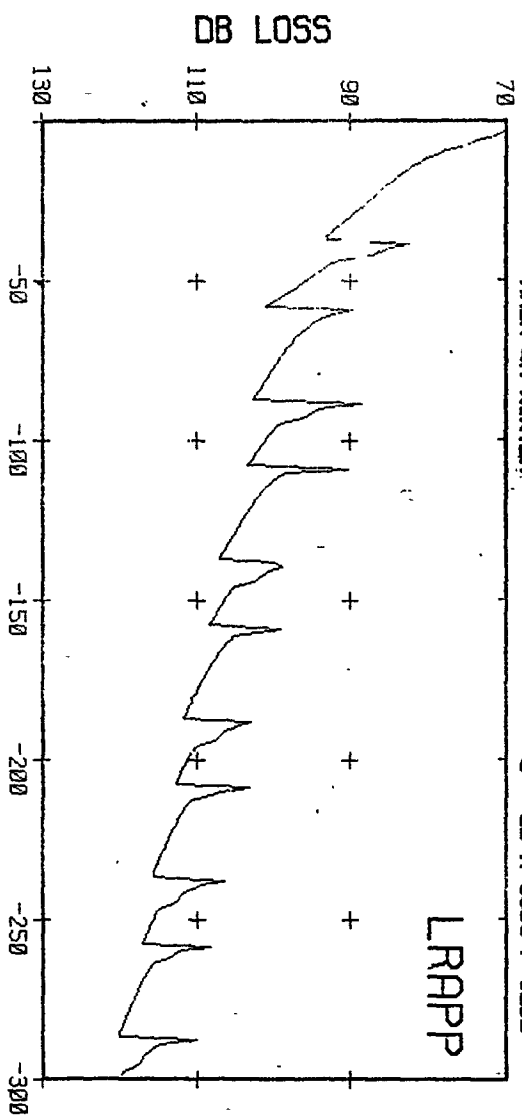


TOTAL -39.7 DB

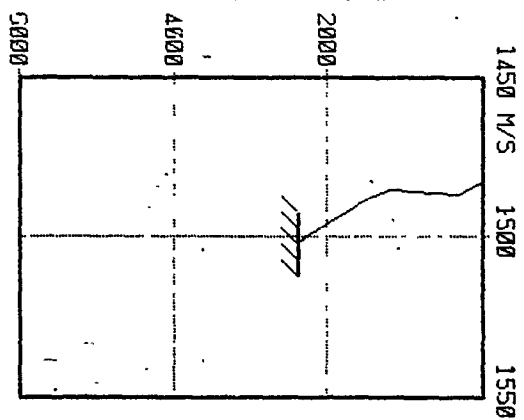
-183-

PRIER AIR WINTER S 20 R 3609 F 1200

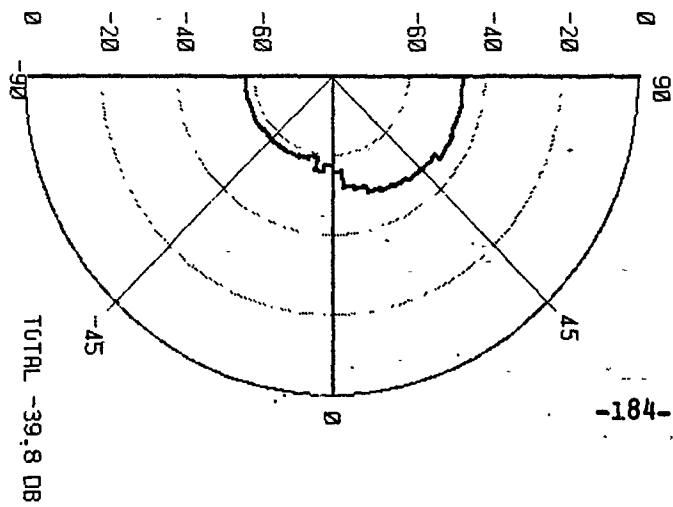
LRAPP



DEPTH IN METERS

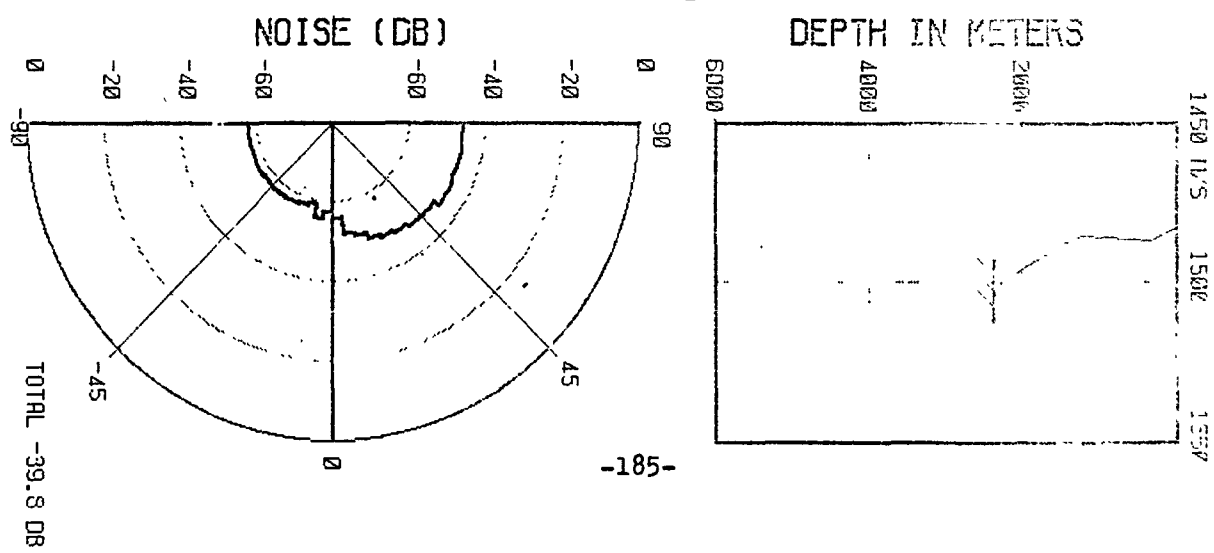
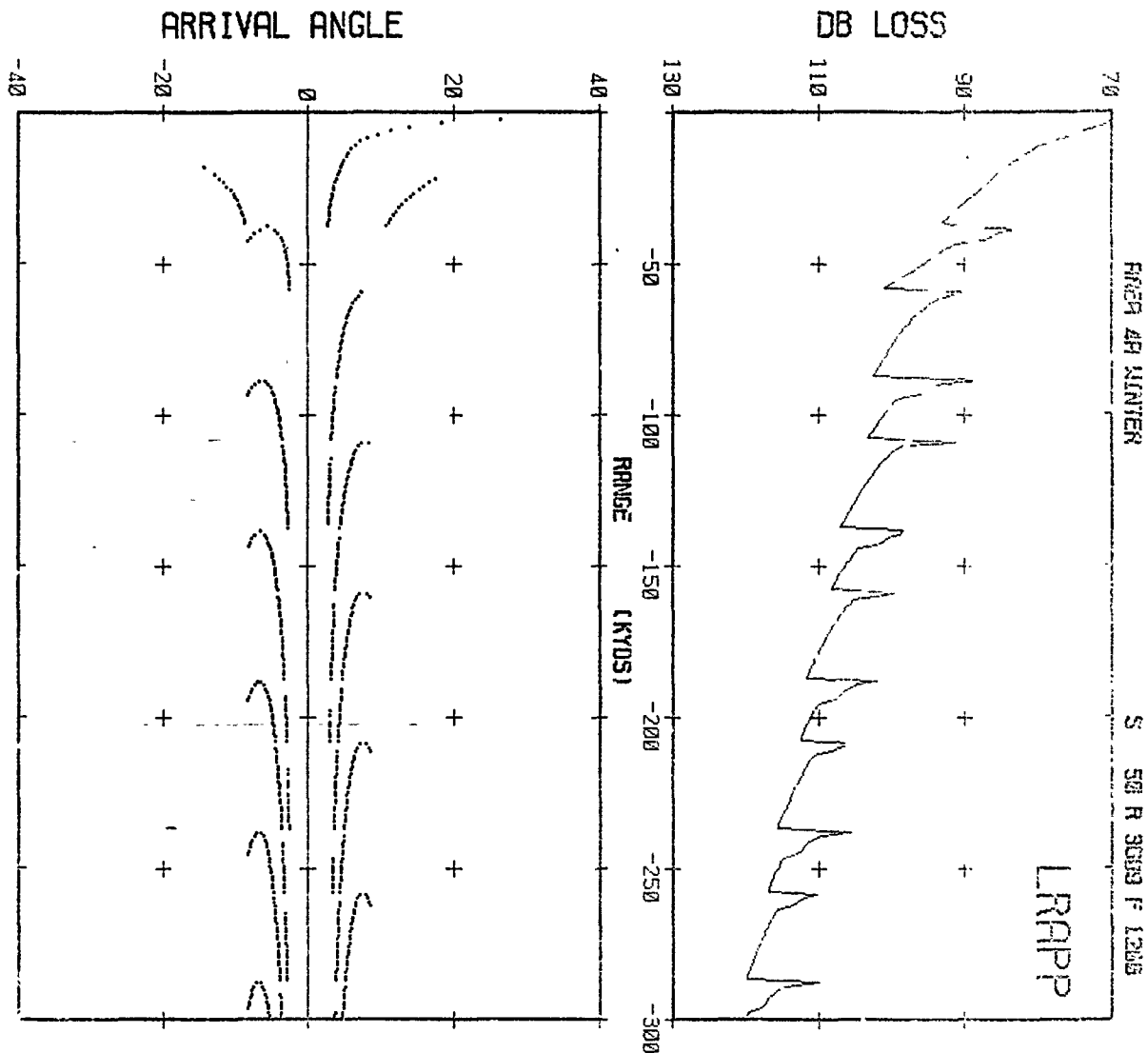


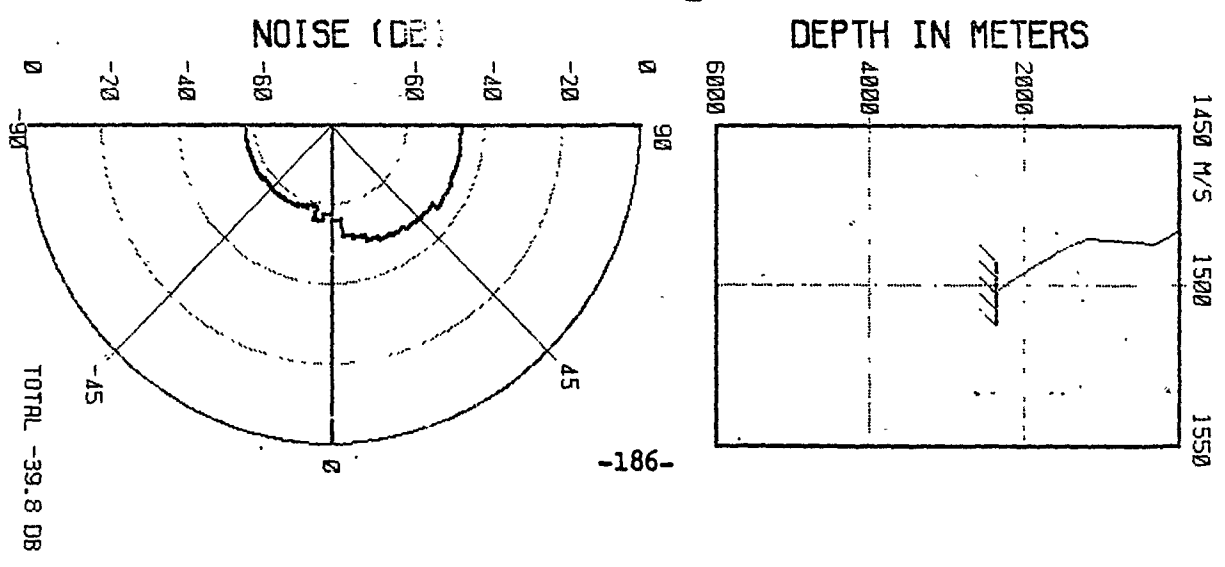
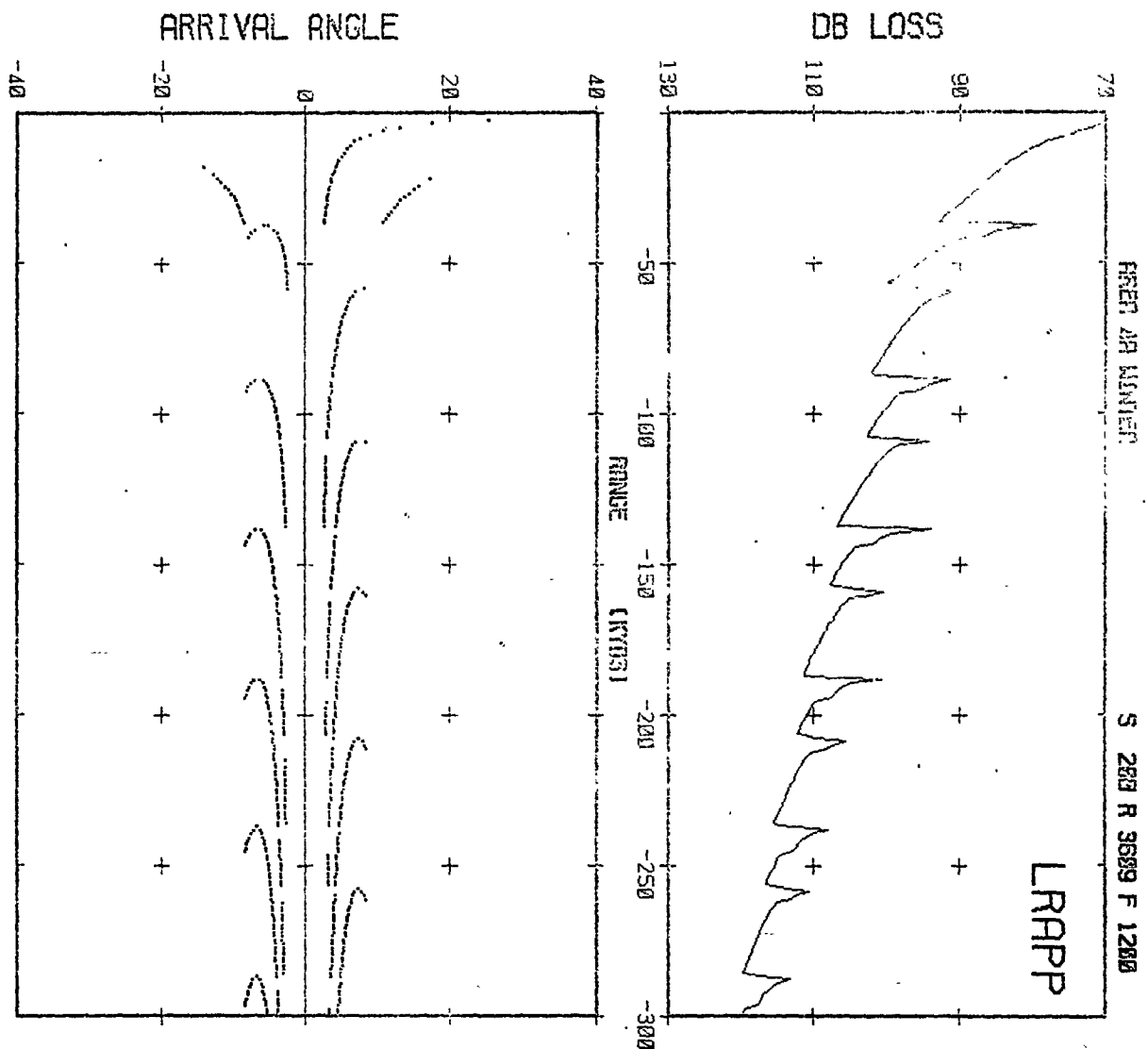
NOISE (DB)

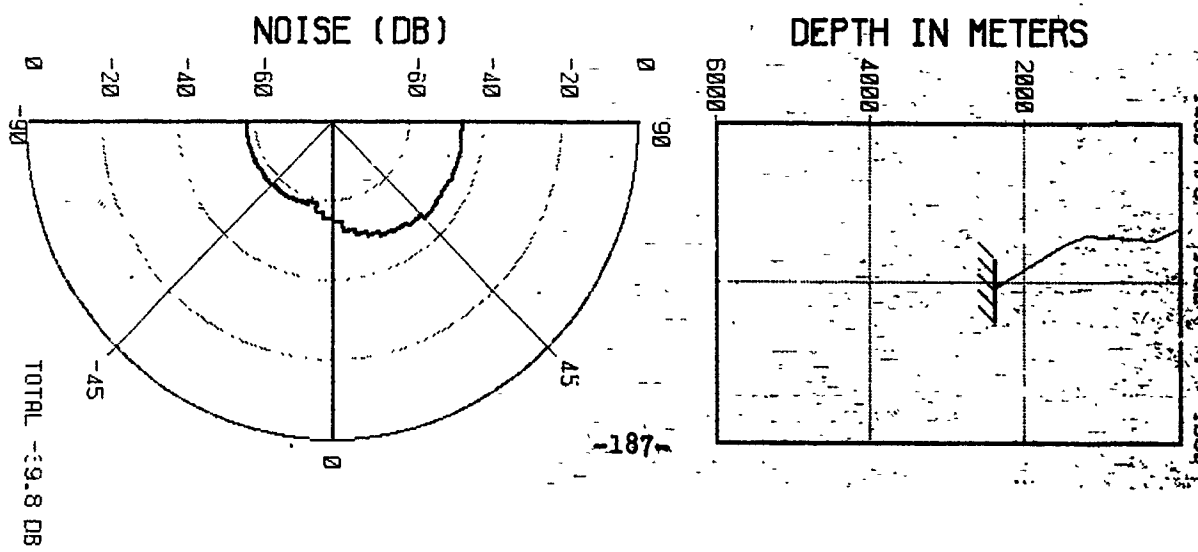
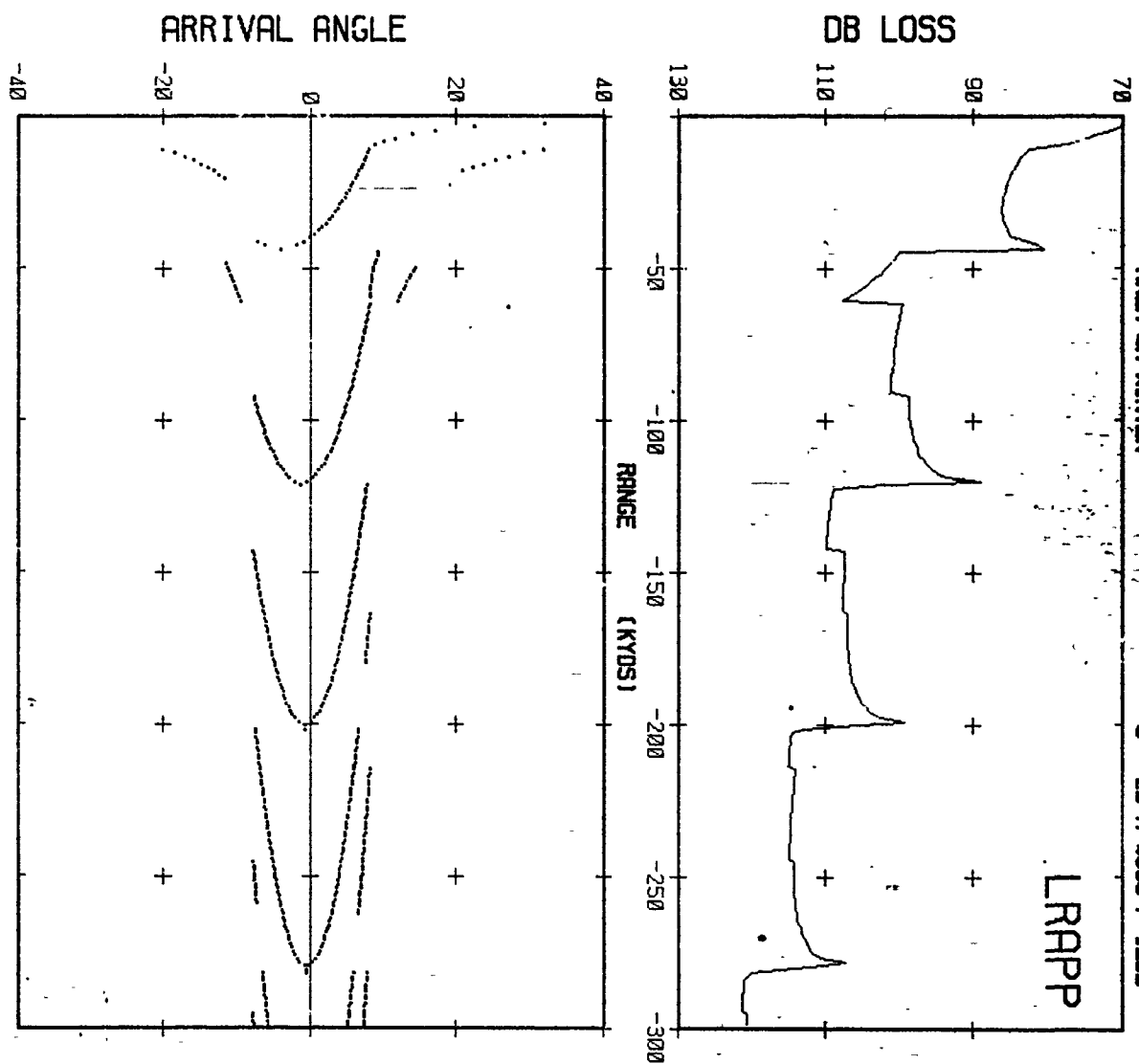


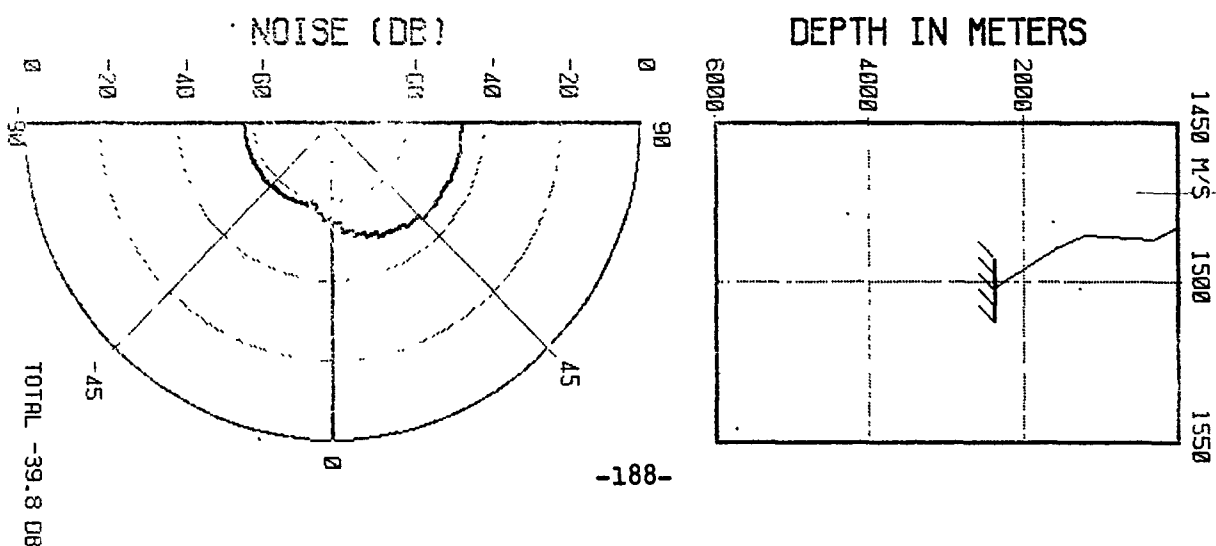
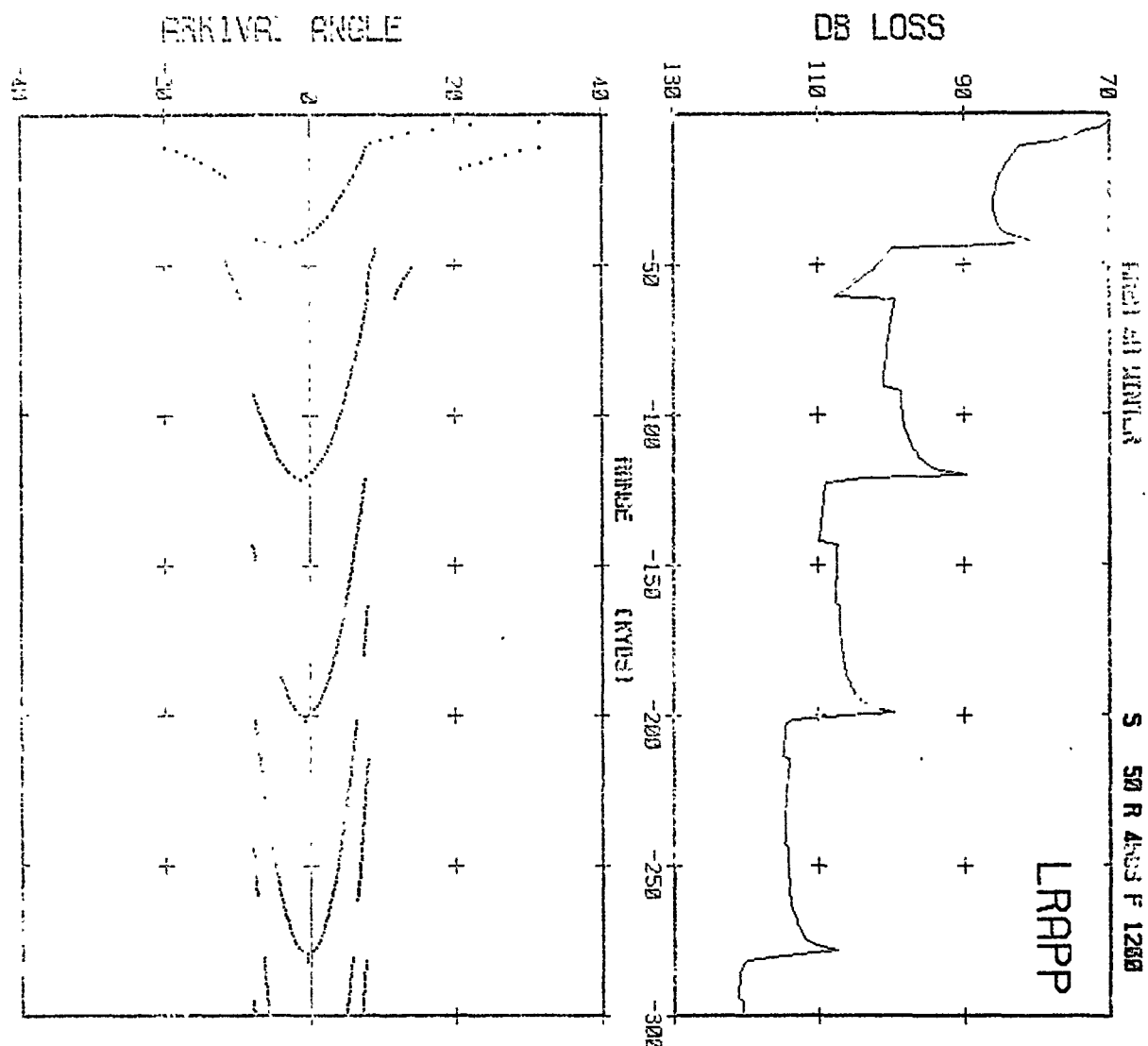
-184-

TOTAL -39.8 DB







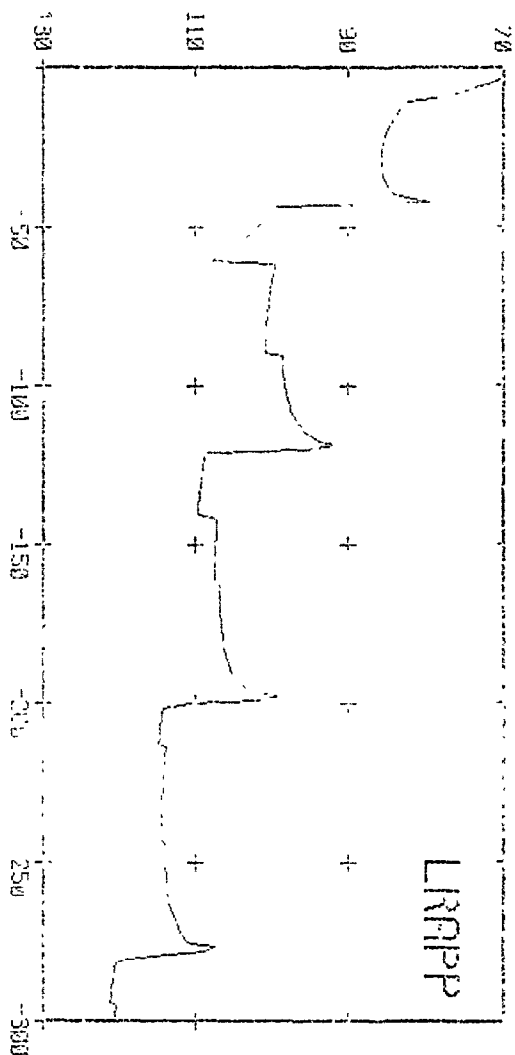


FROM AN UNDER

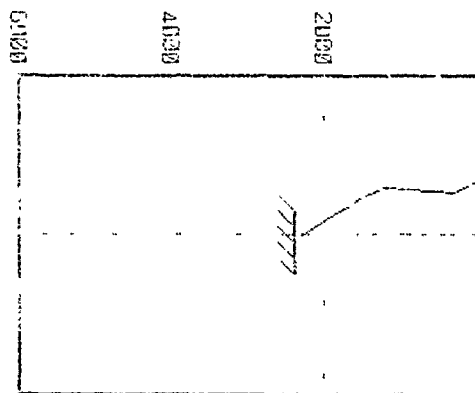
S 250 H 4503 F 1203

1150 M/S 1500 1550

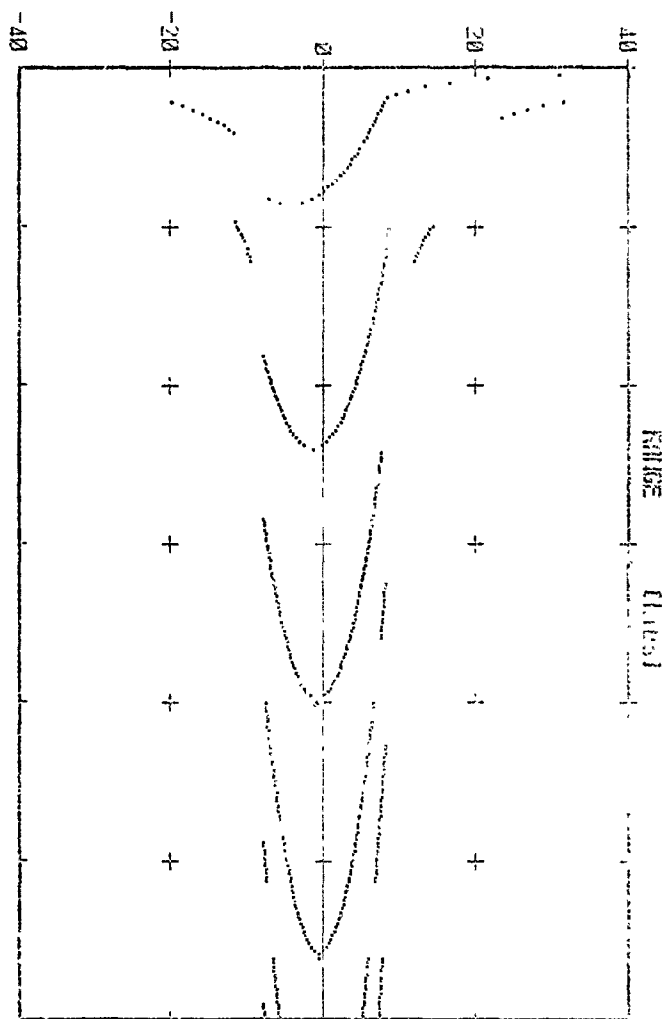
DB LOSS



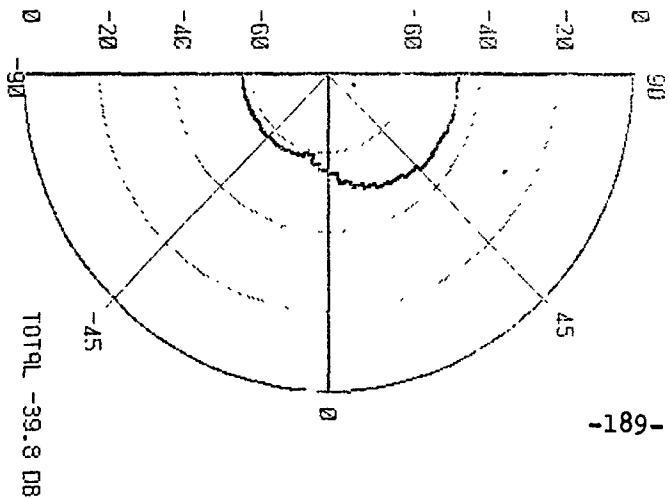
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)

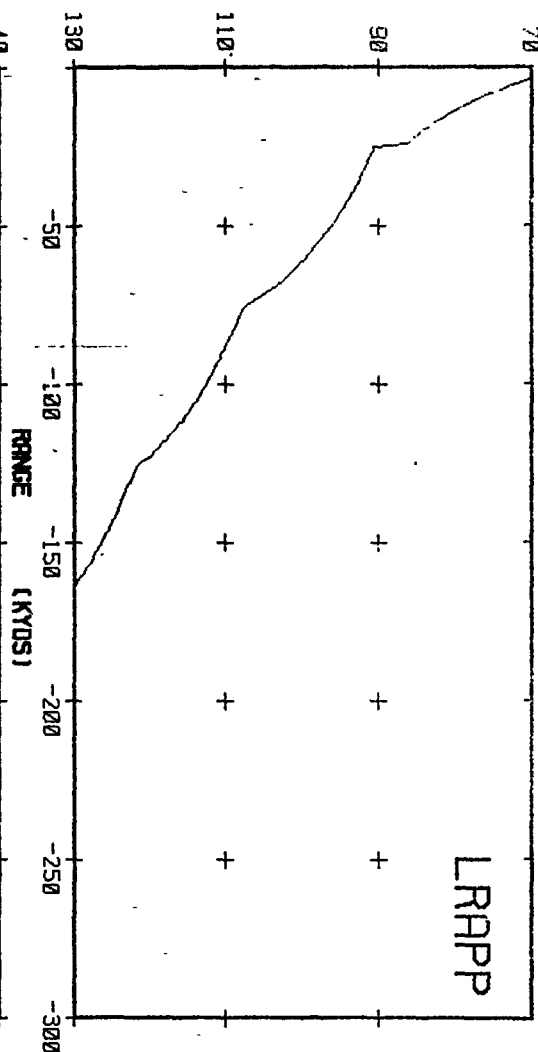


AREA 4R WINTER

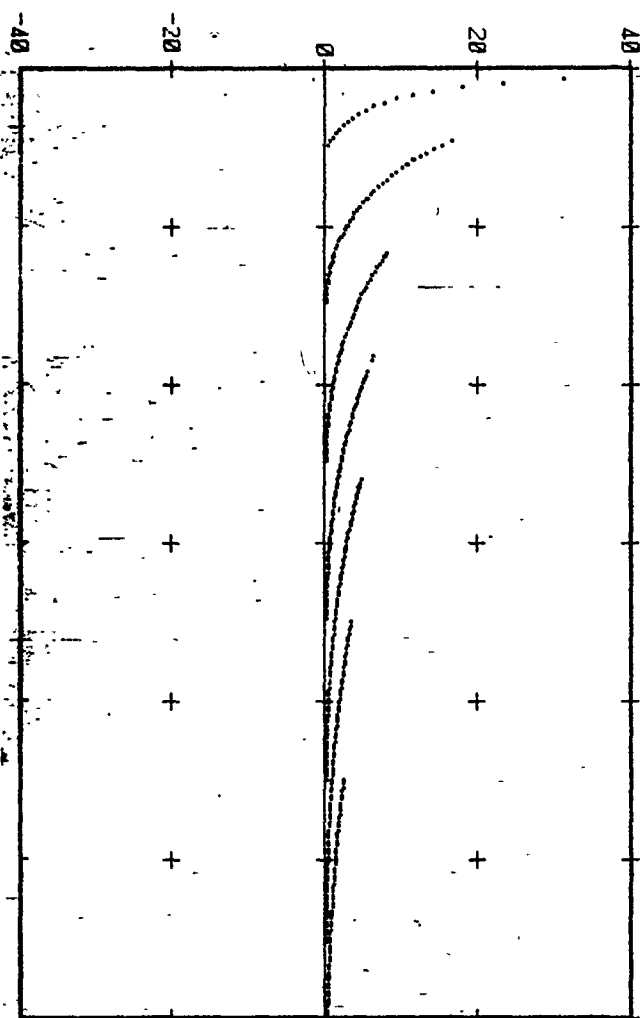
S 20 R 7798 F 1200

LRAPP

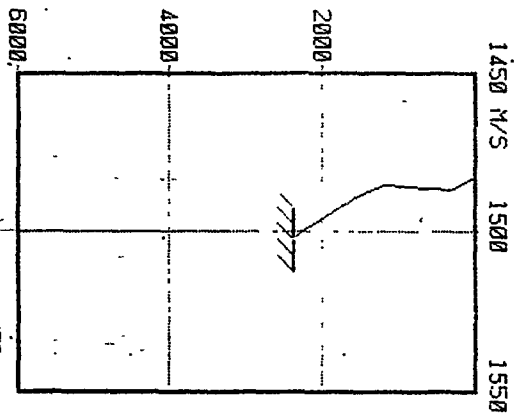
DB LOSS



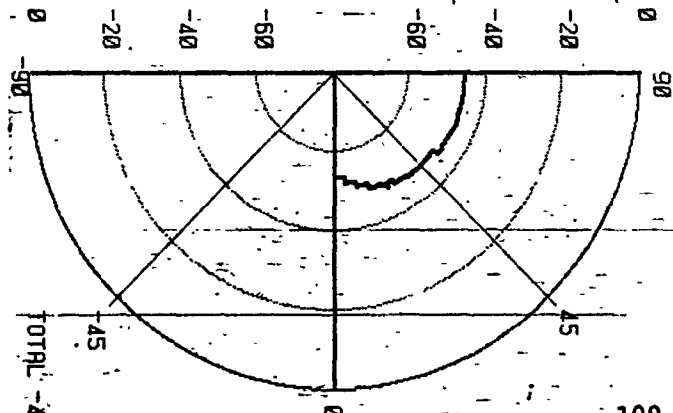
ARRIVAL ANGLE



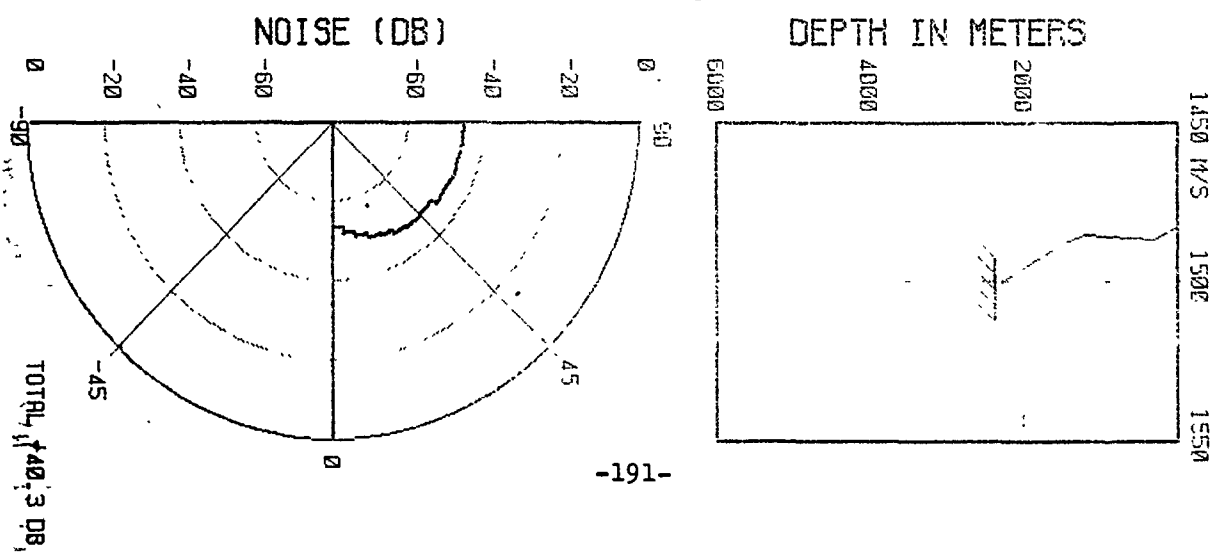
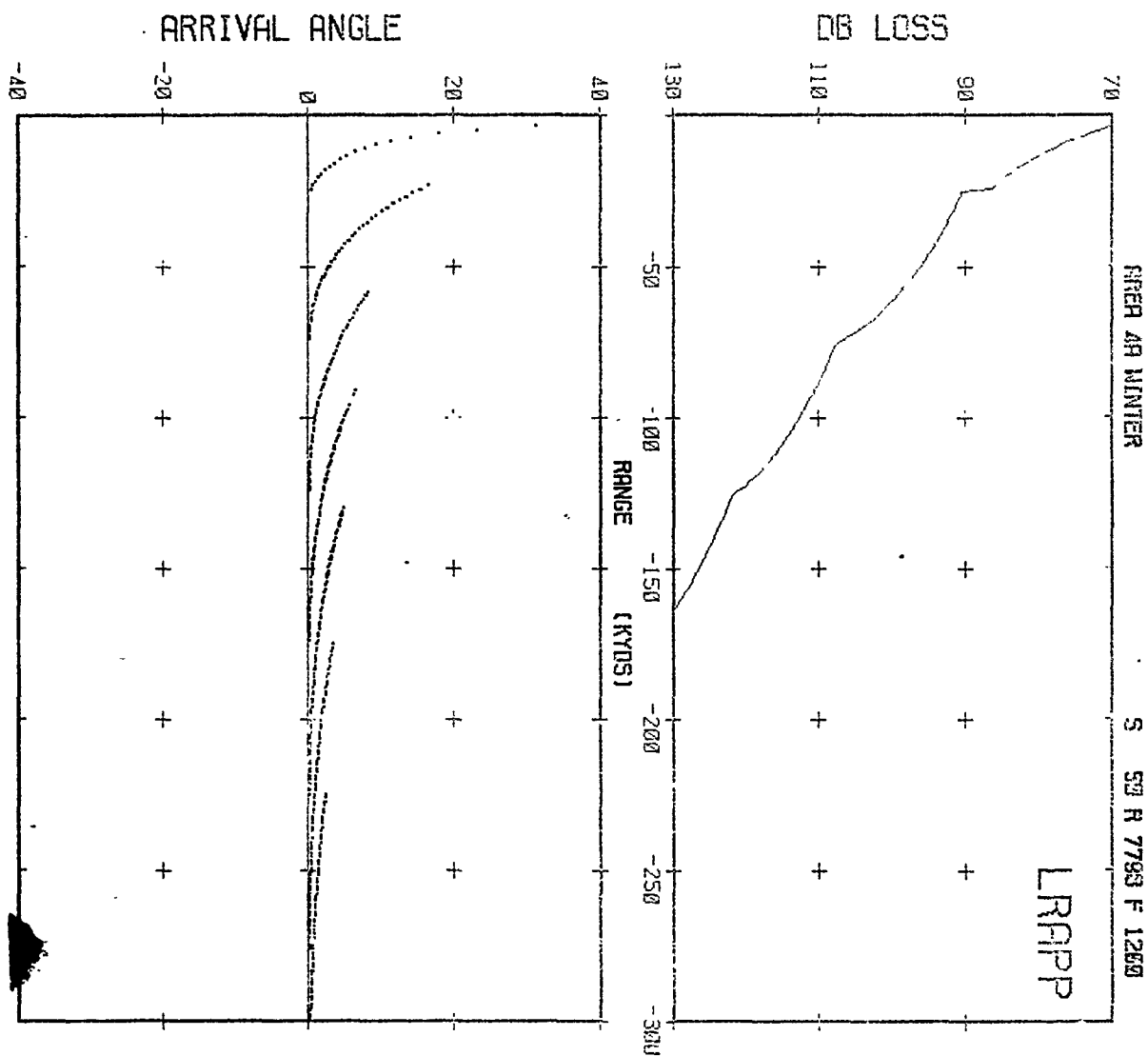
DEPTH IN METERS

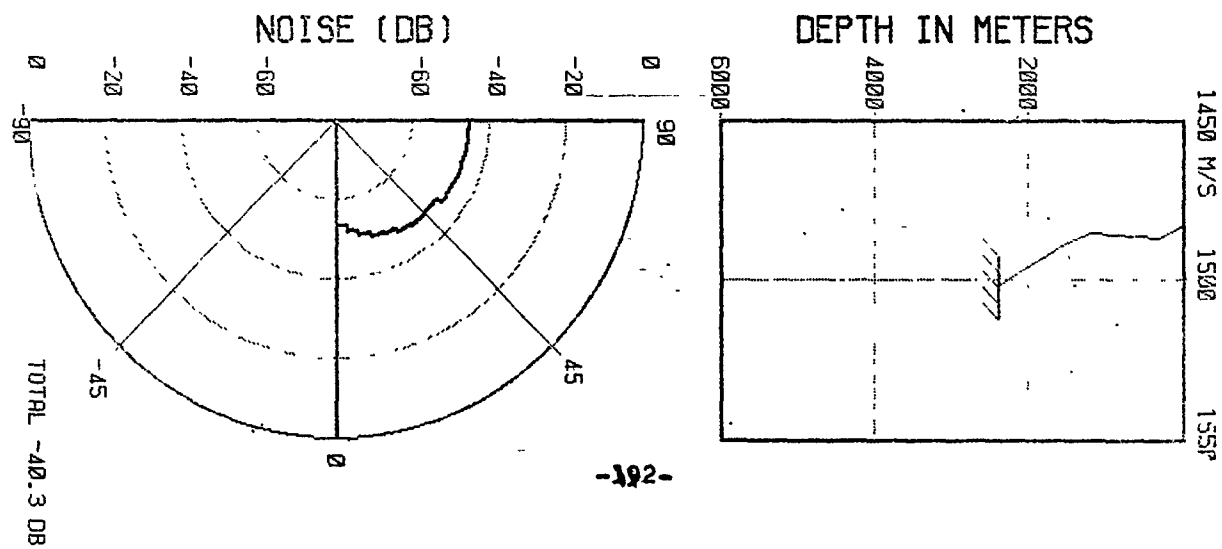
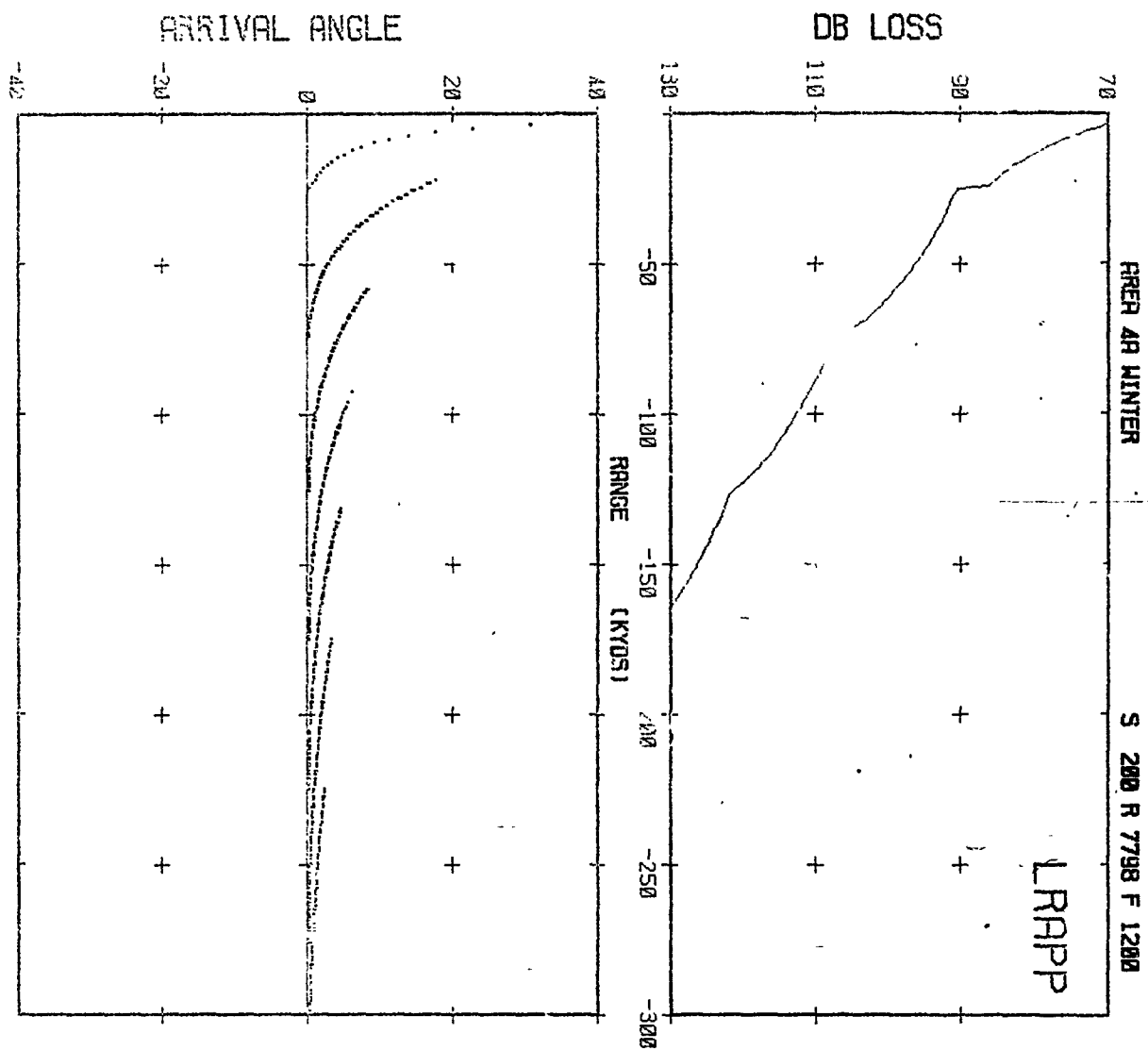


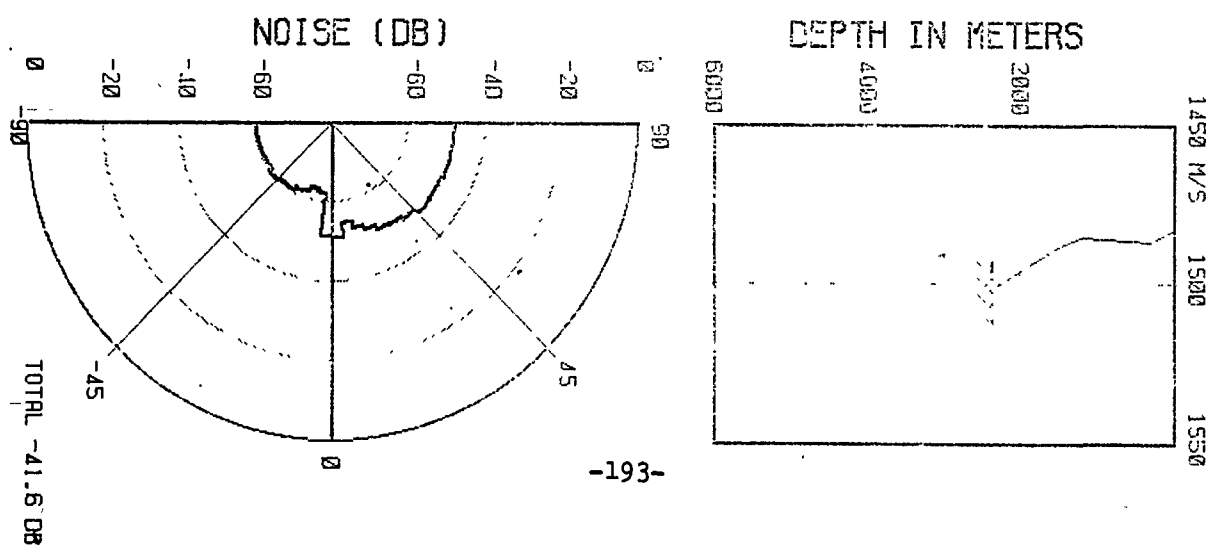
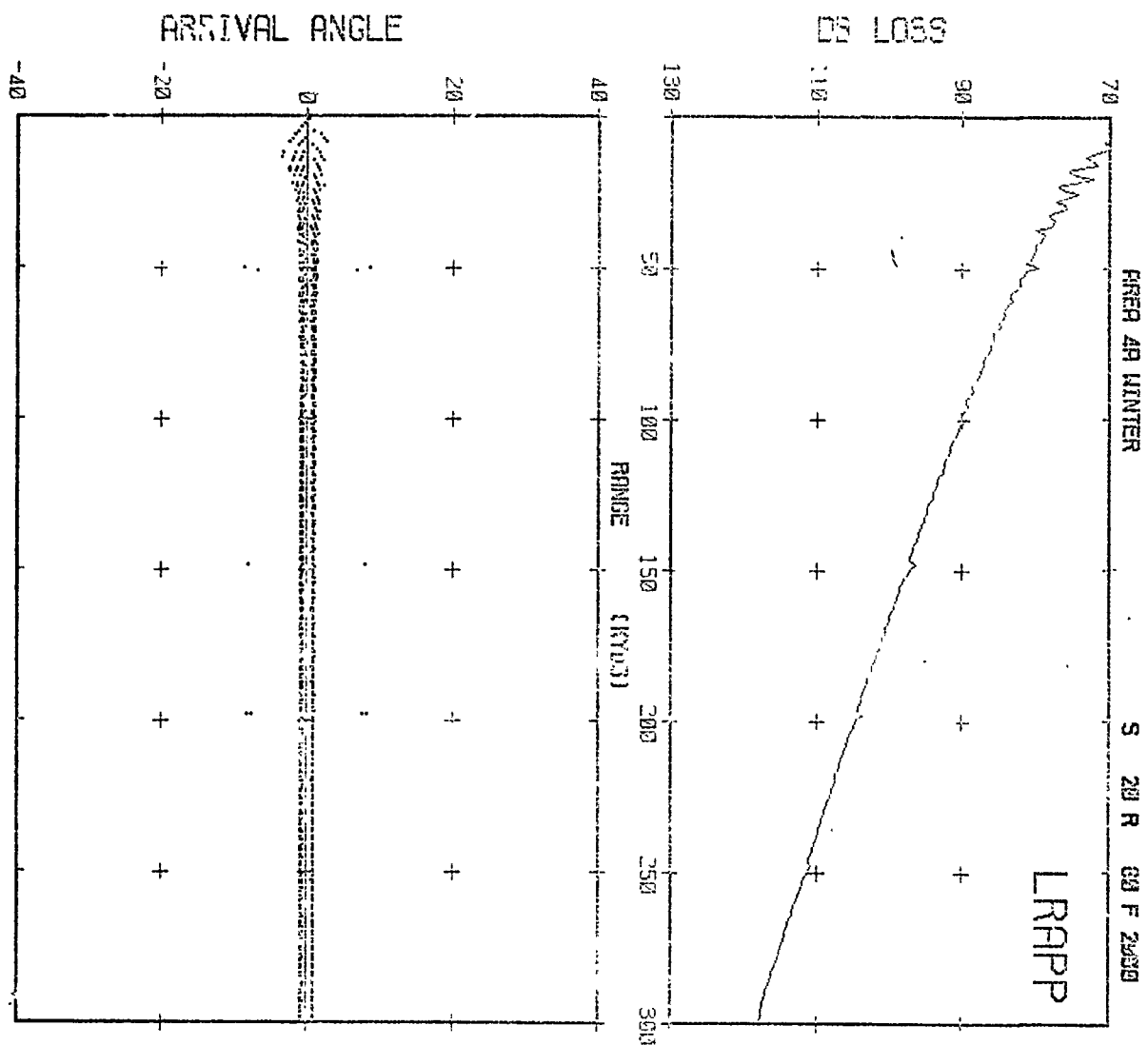
NOISE (DB)

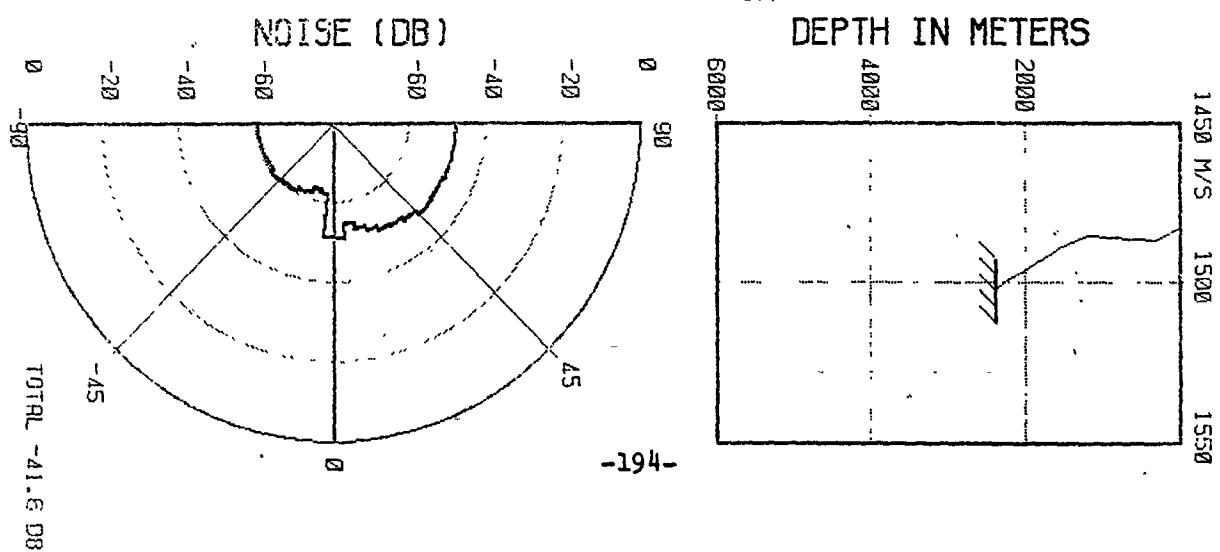
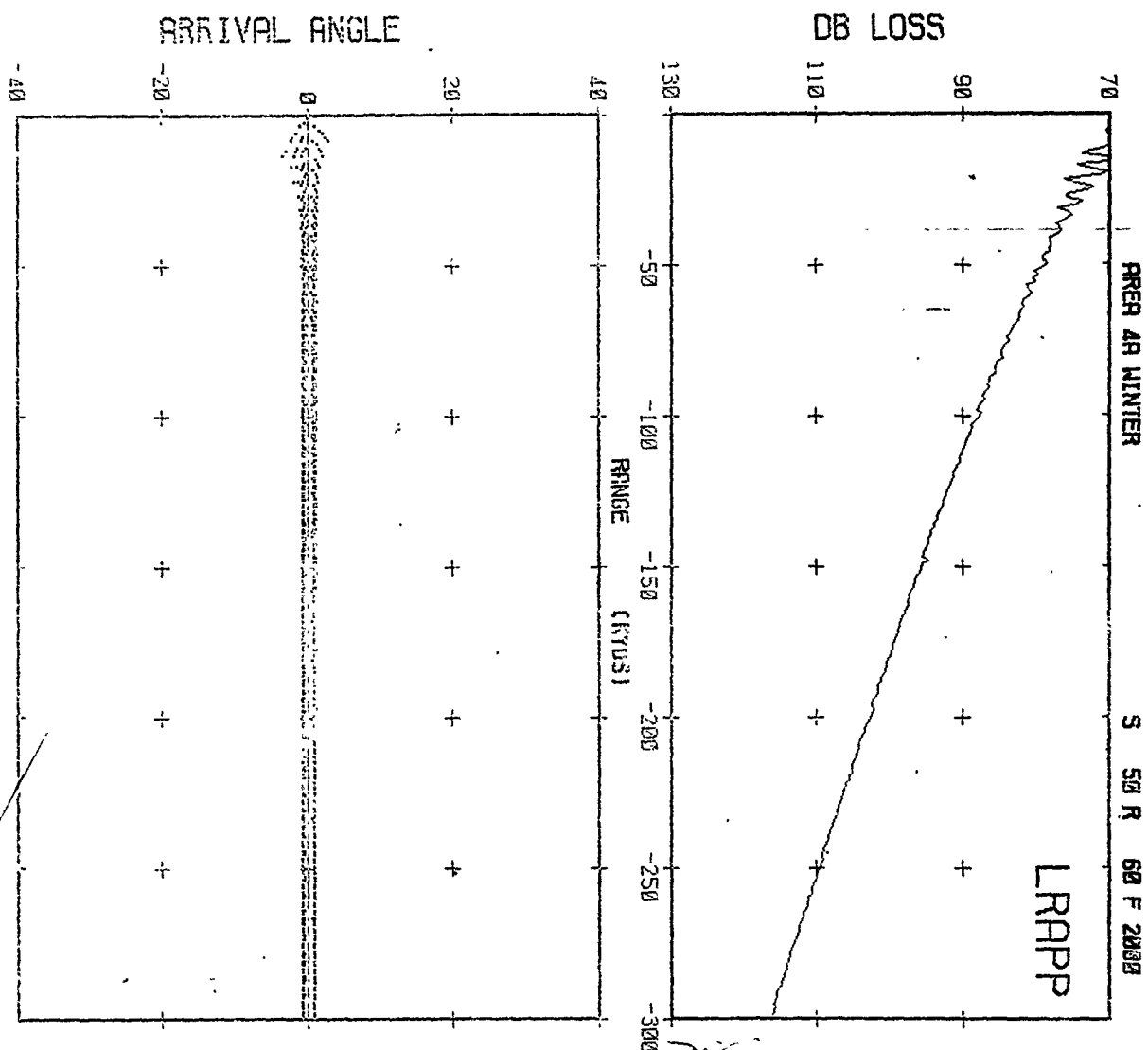


TOTAL -40.3 DB







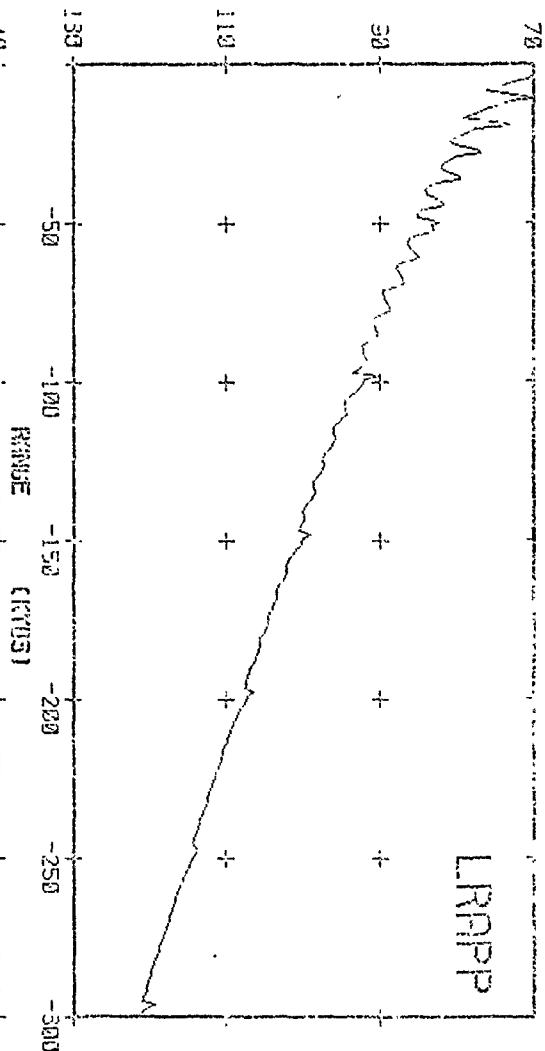


AREA 40 LITERS

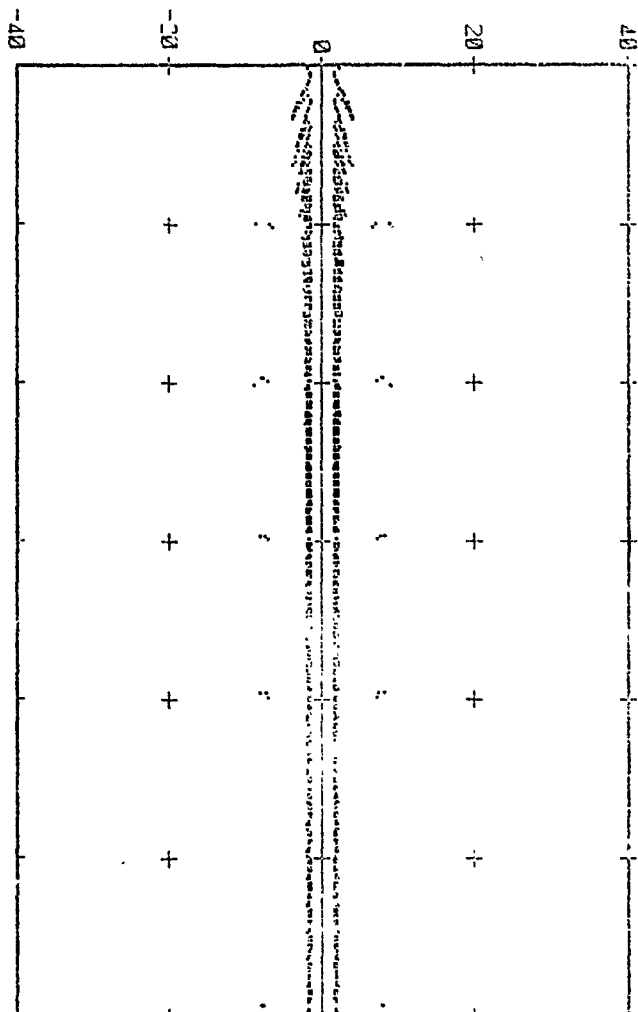
S 241 R C.F. 2020

1452 N/S 1502 1550

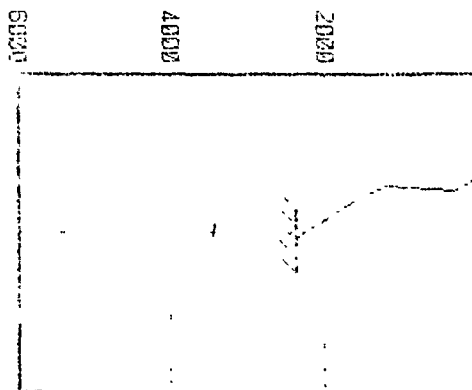
DB LOSS



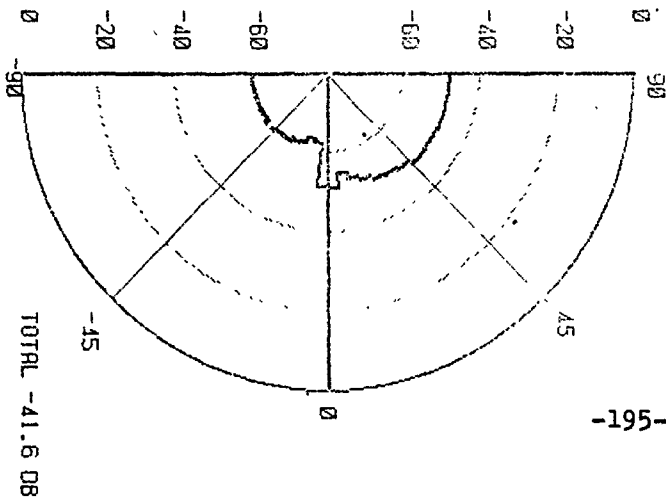
ARRIVAL ANGLE

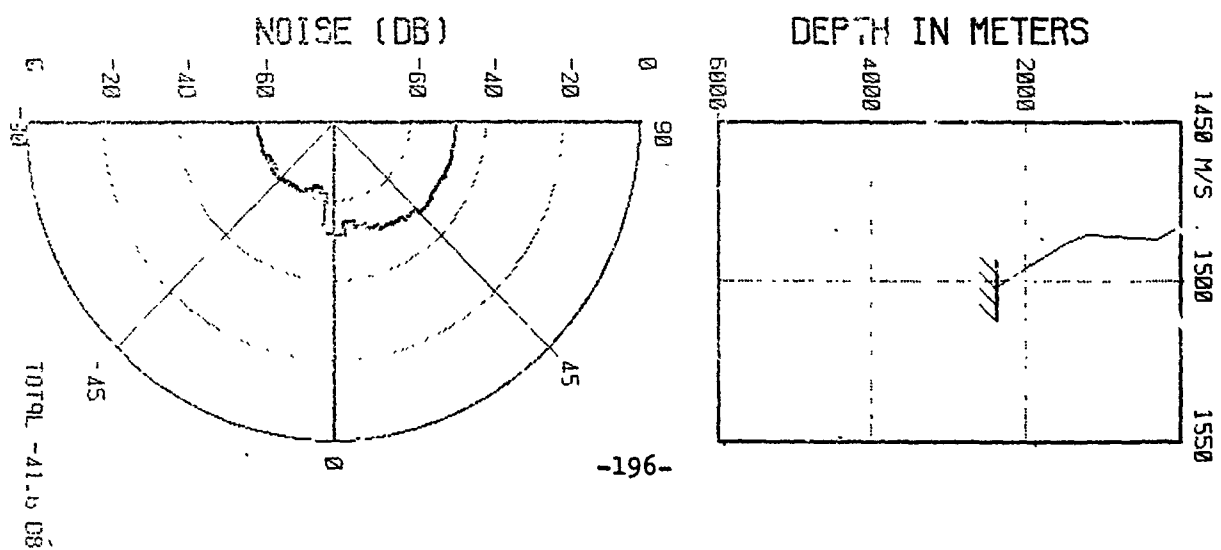
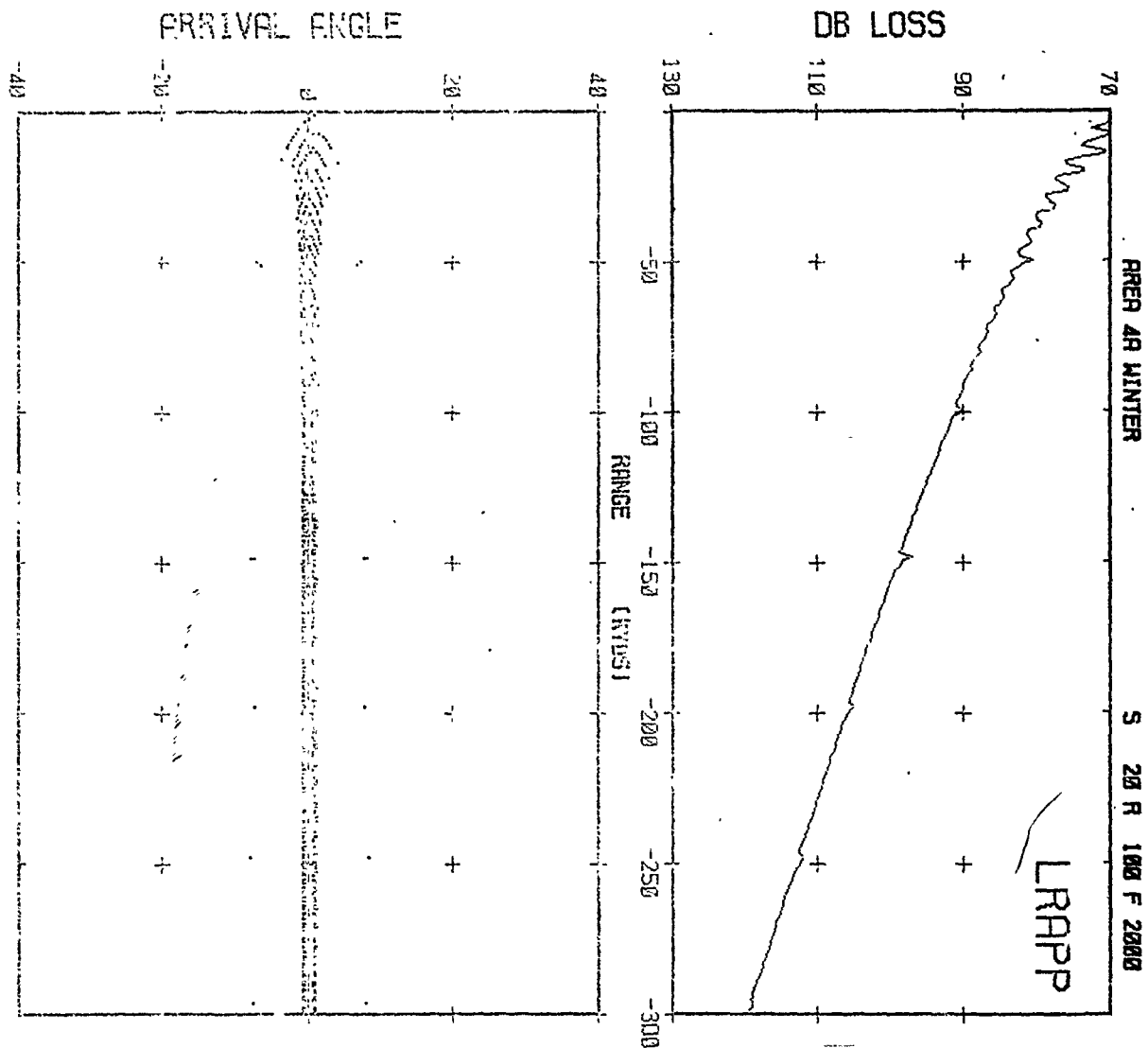


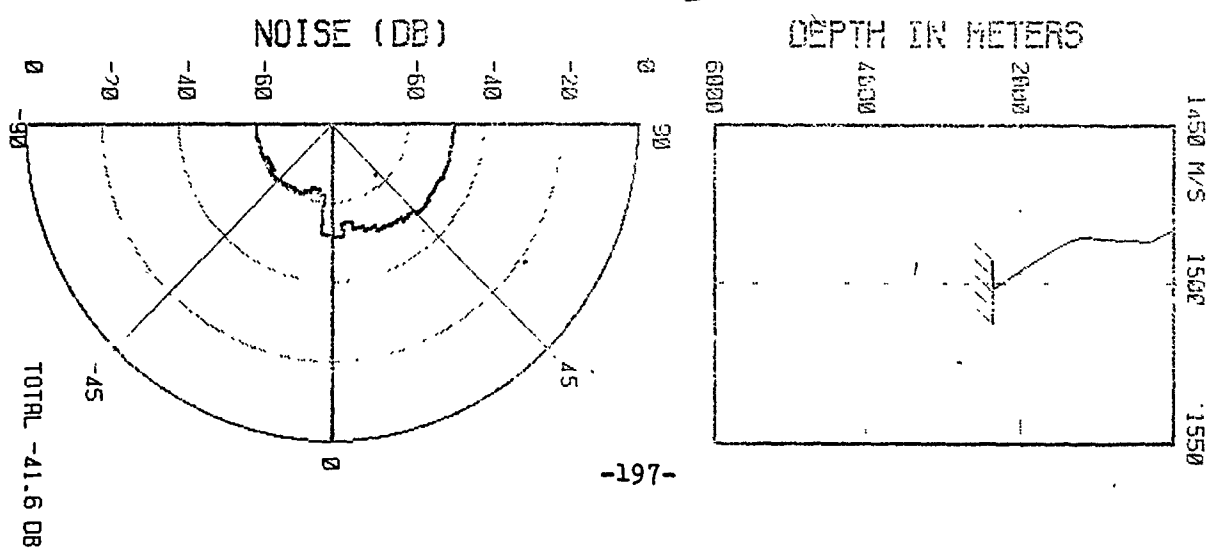
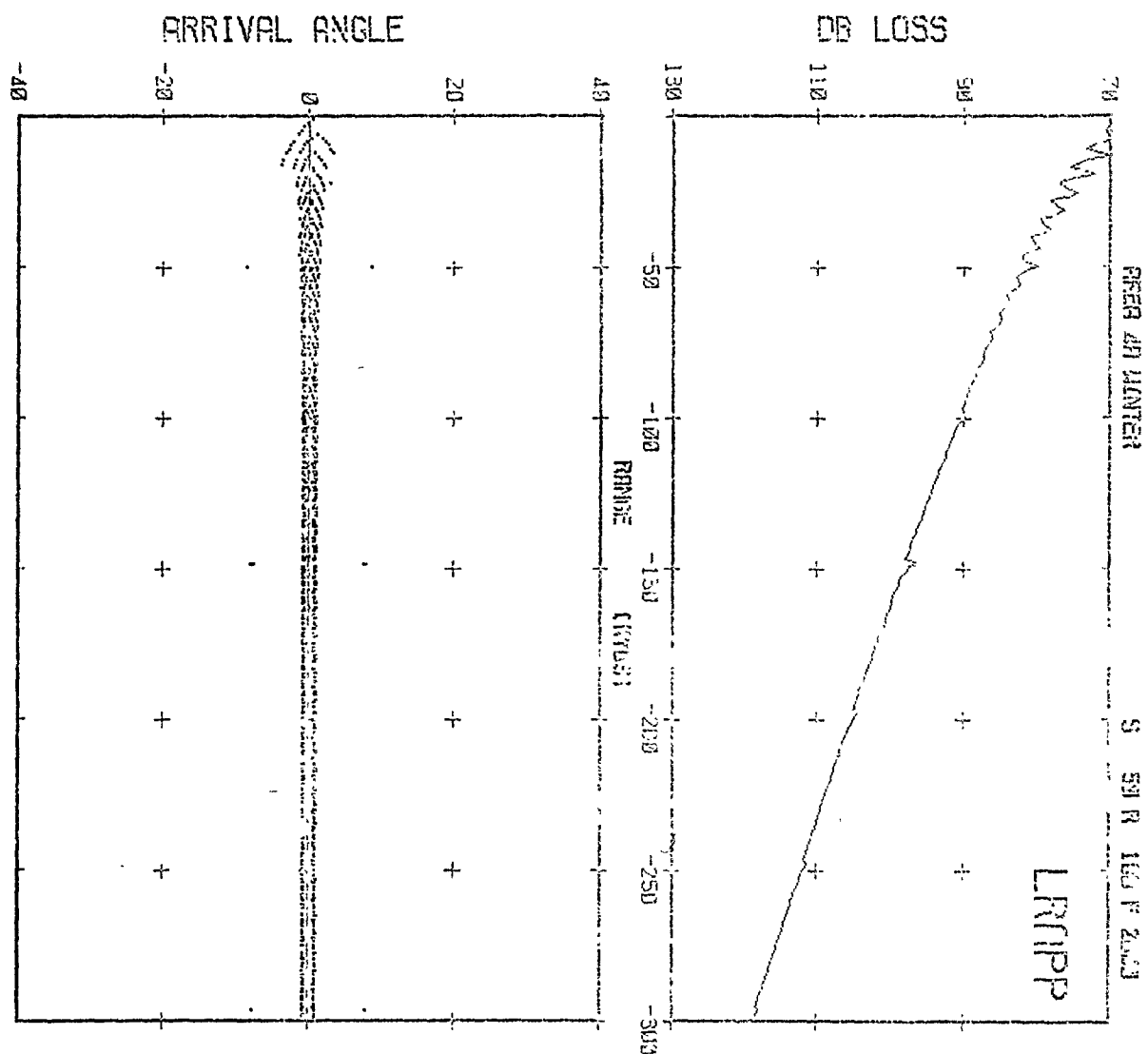
DEPTH IN METERS

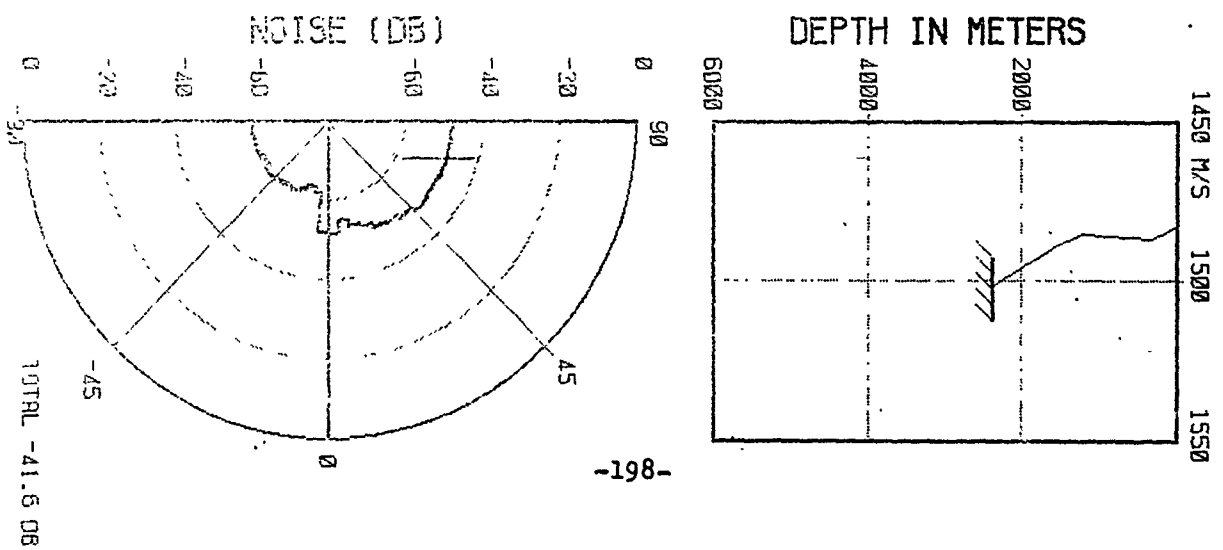
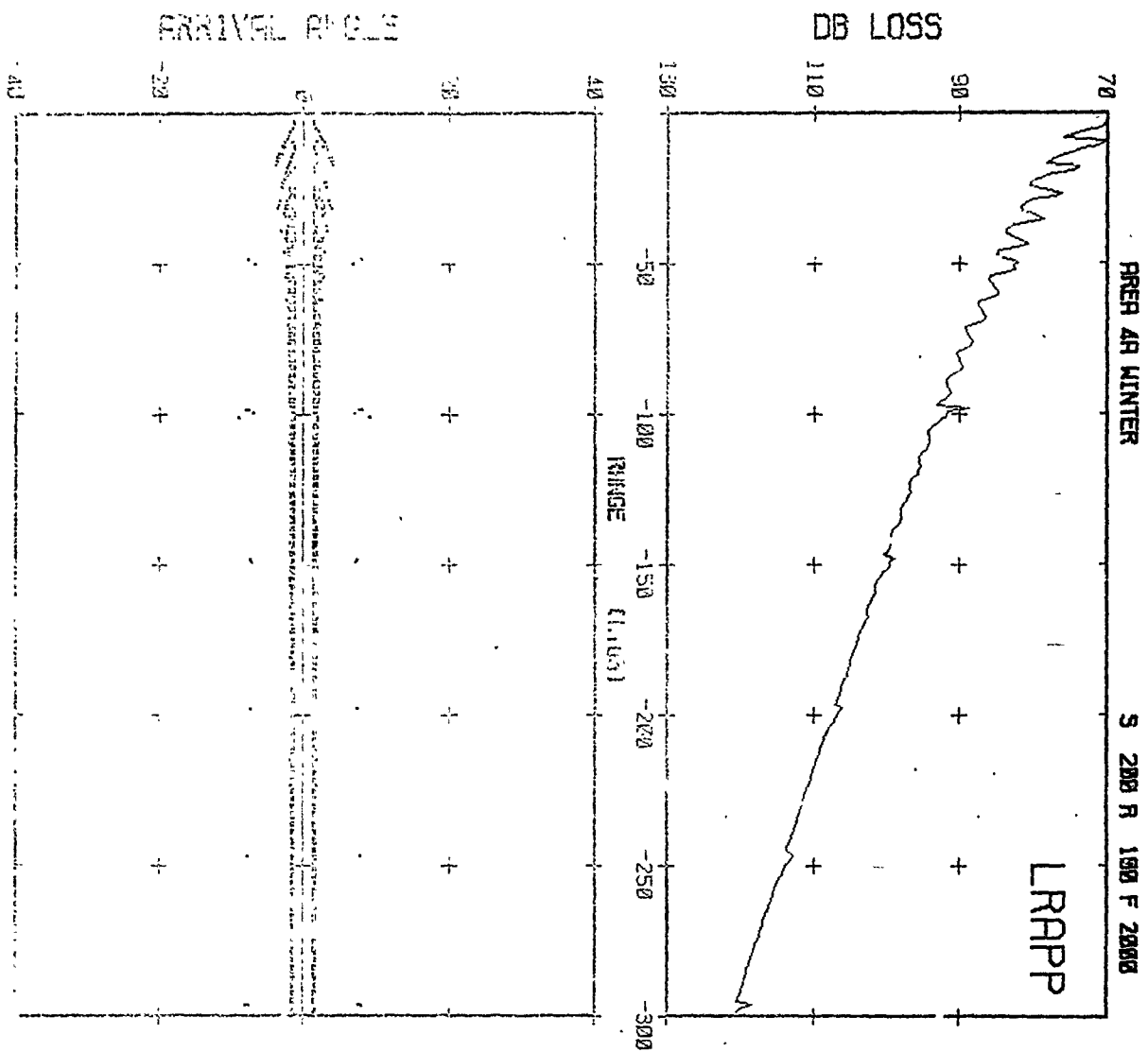


NOISE (DB)







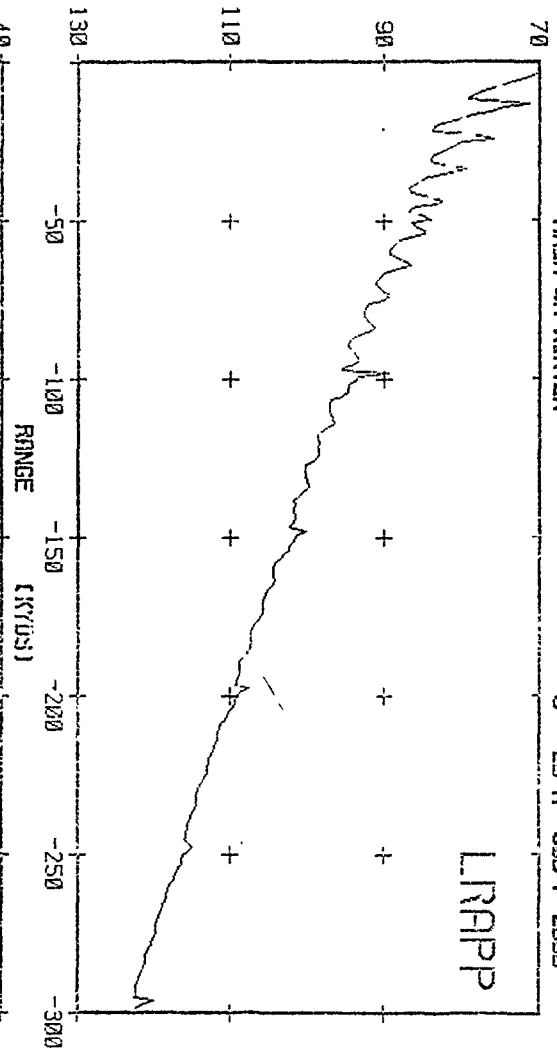


AREA AIR HINTER

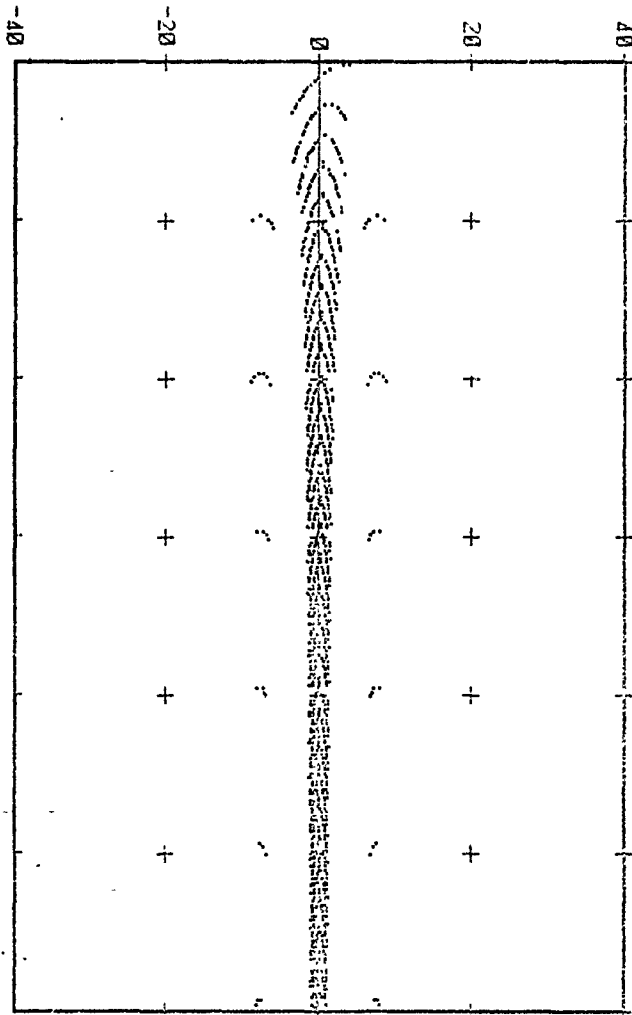
S 20 R 300 F 2030

1450 M/S 1500 1550

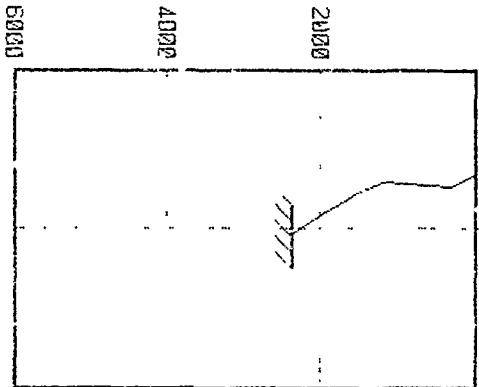
DB LOSS



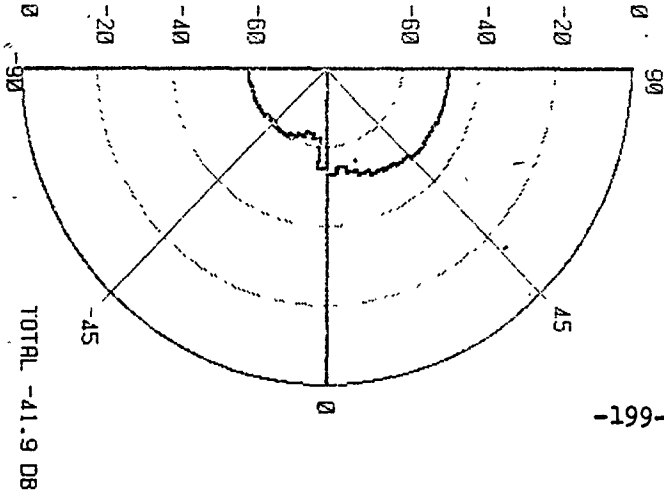
ARRIVAL ANGLE

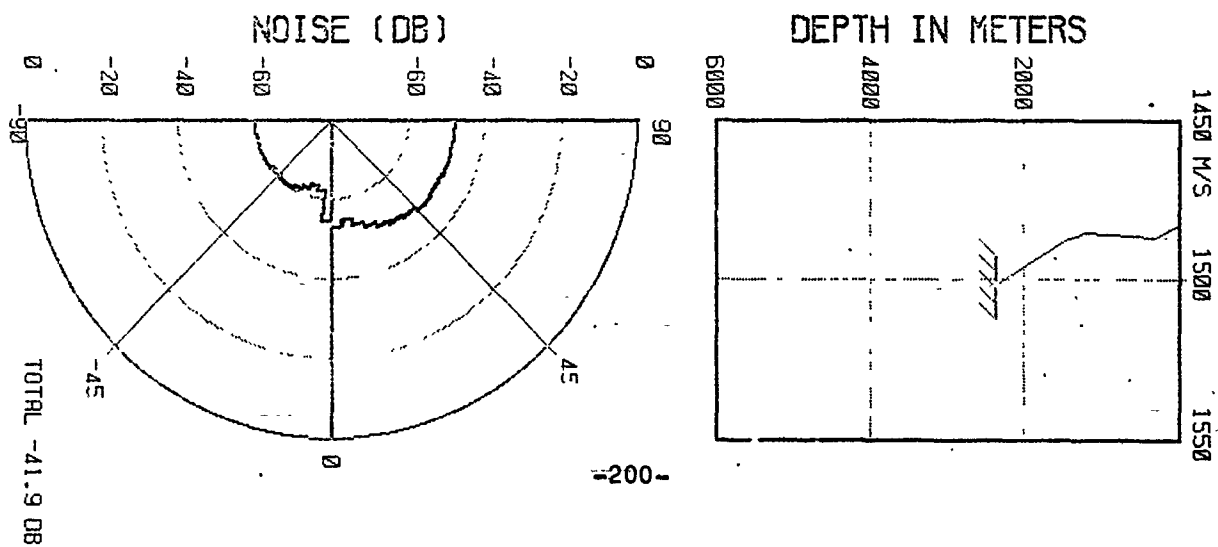
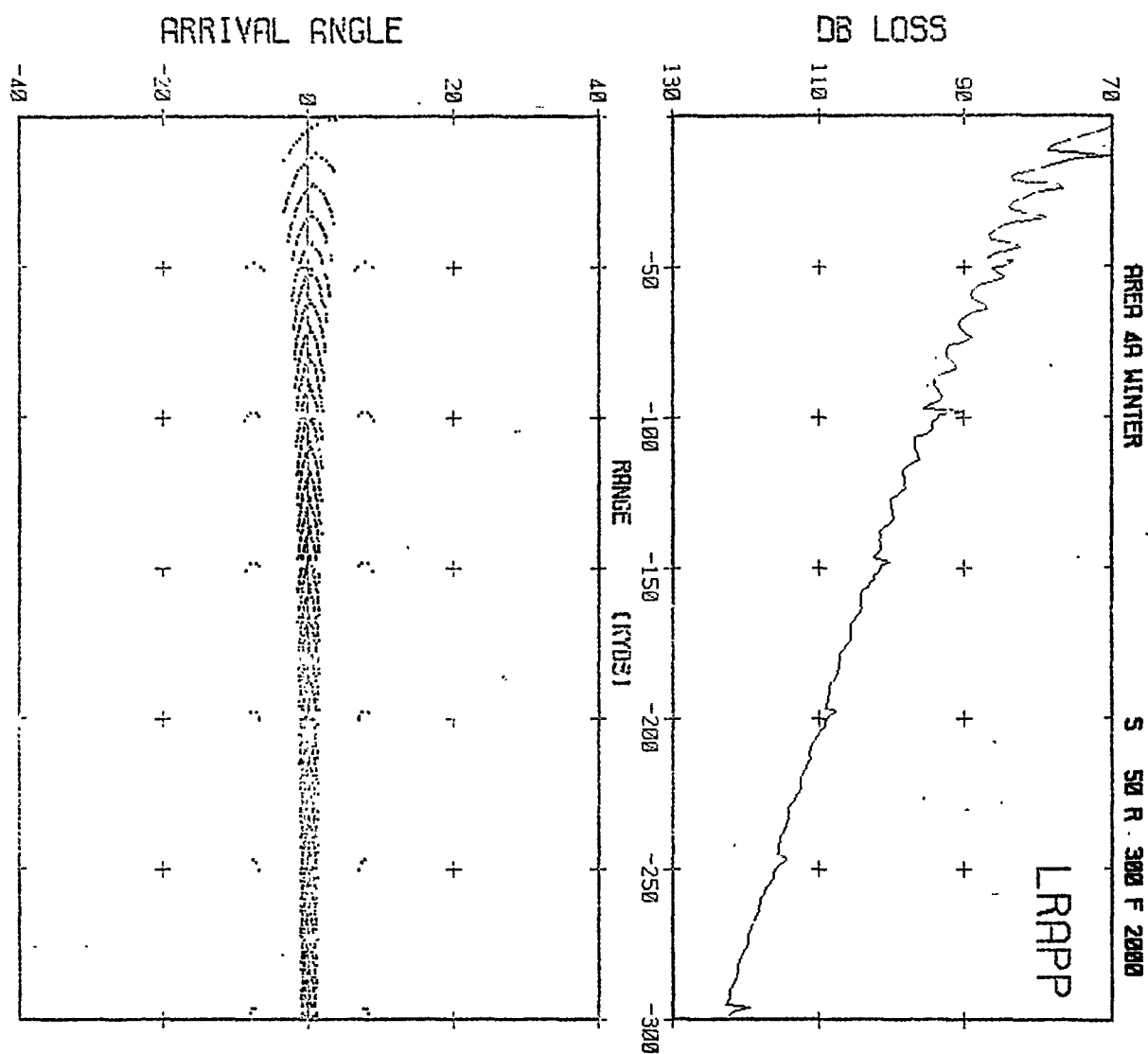


DEPTH IN METERS



NOISE (DB)





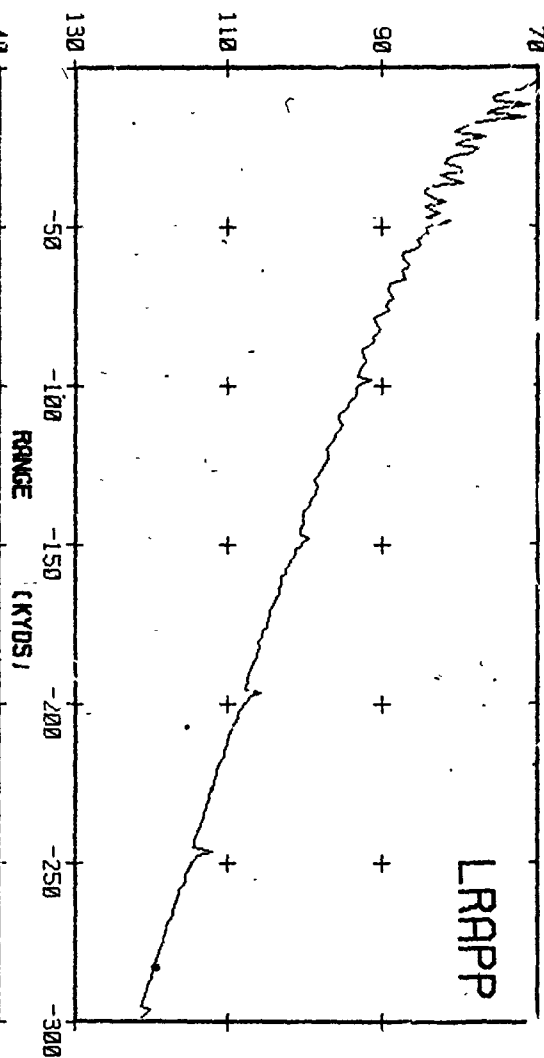
AREA 4A WINTER

S 2800 R 3000 F 2000

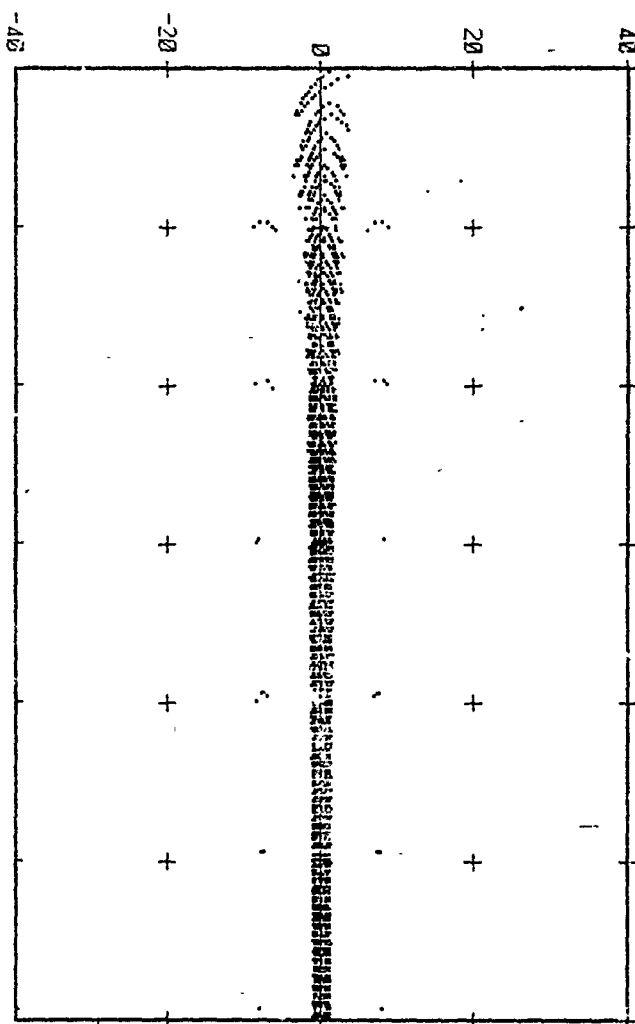
1450 M/S 1500

1550

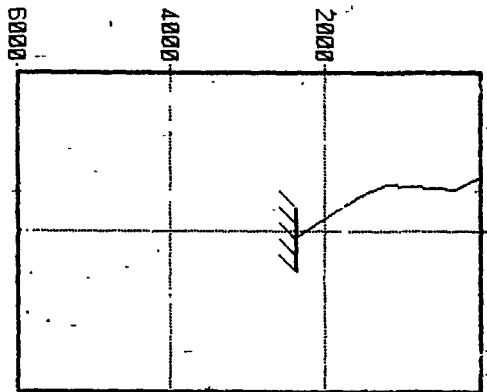
DB LOSS



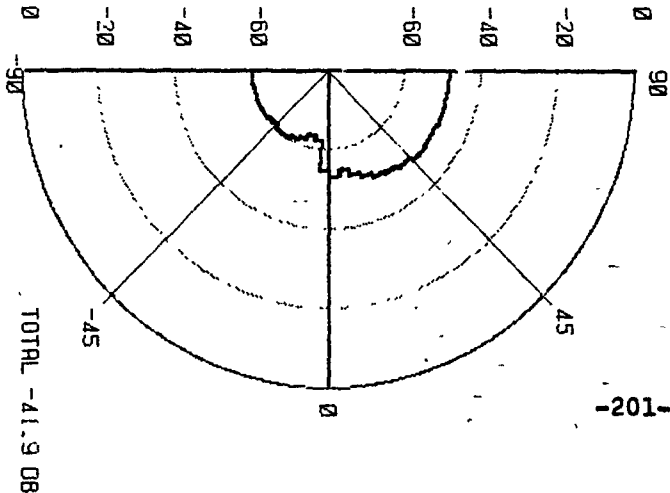
ARRIVAL ANGLE

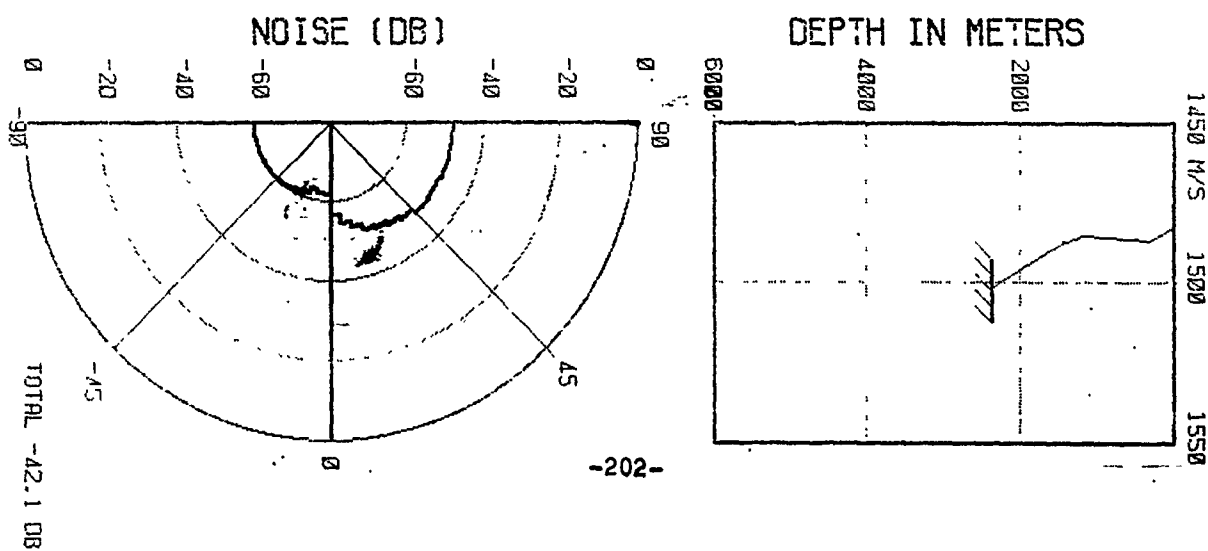
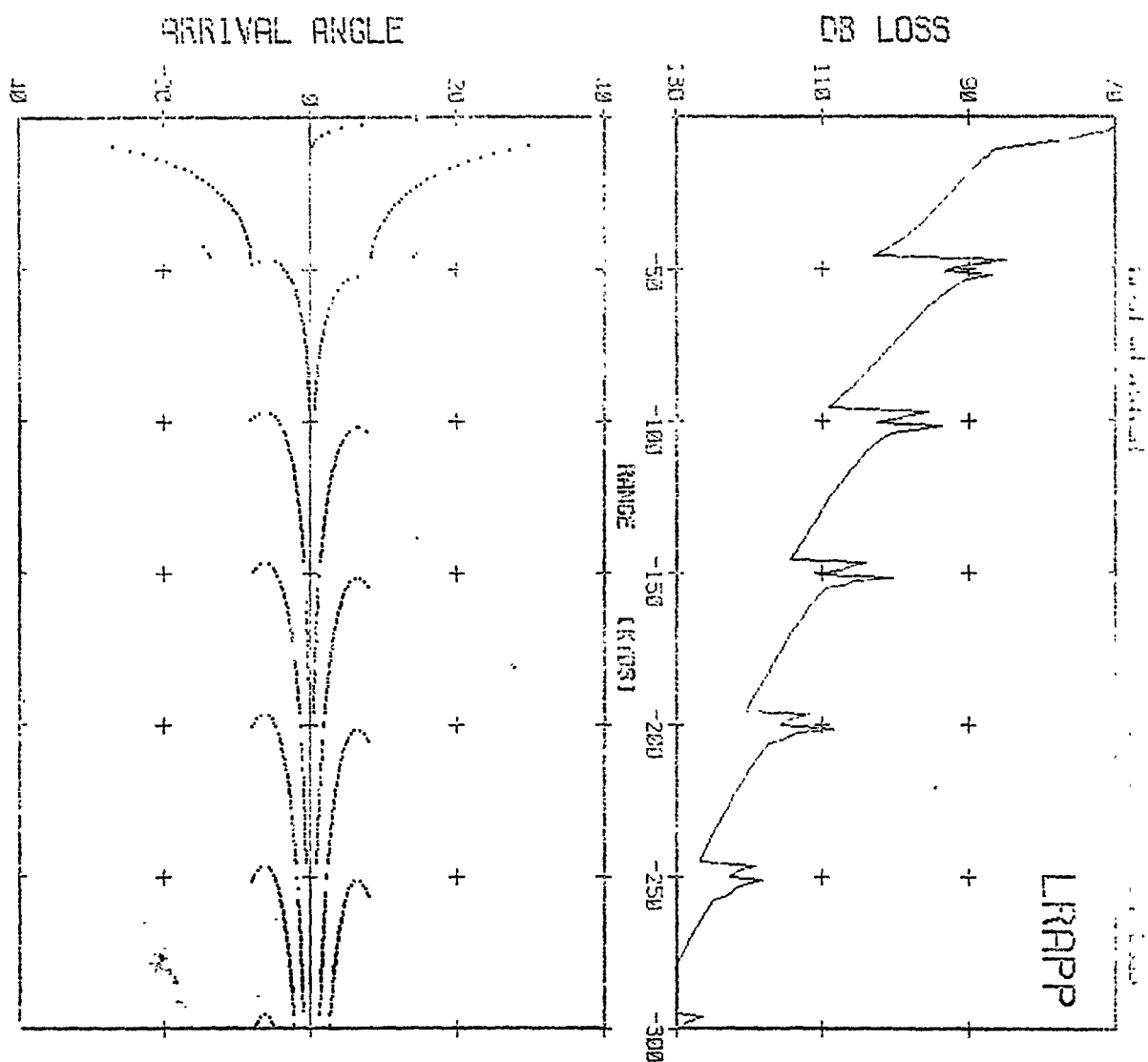


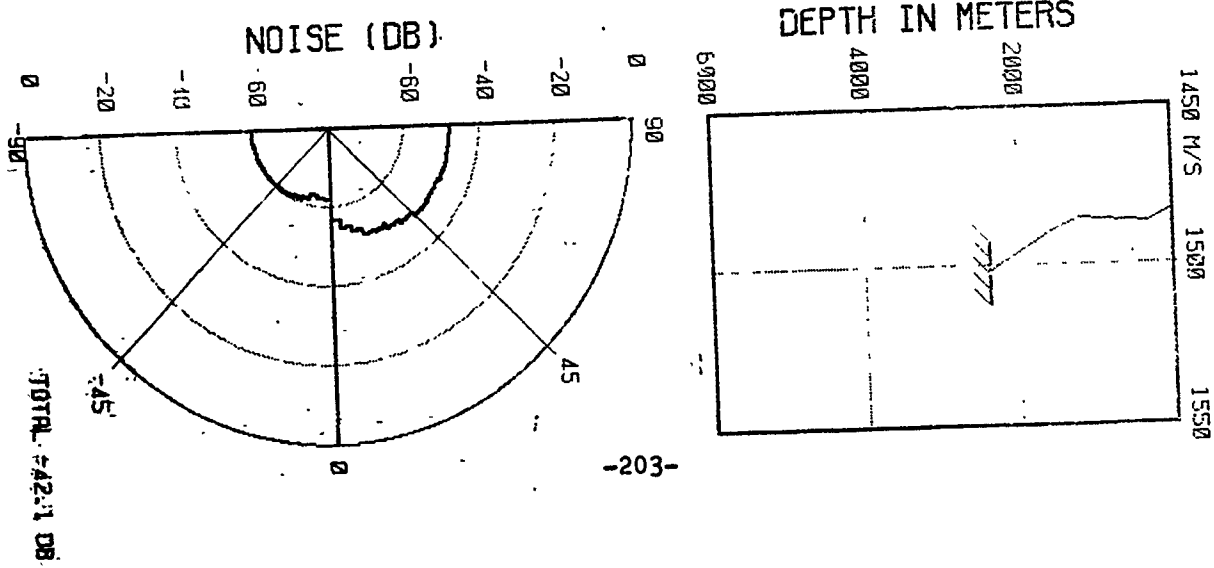
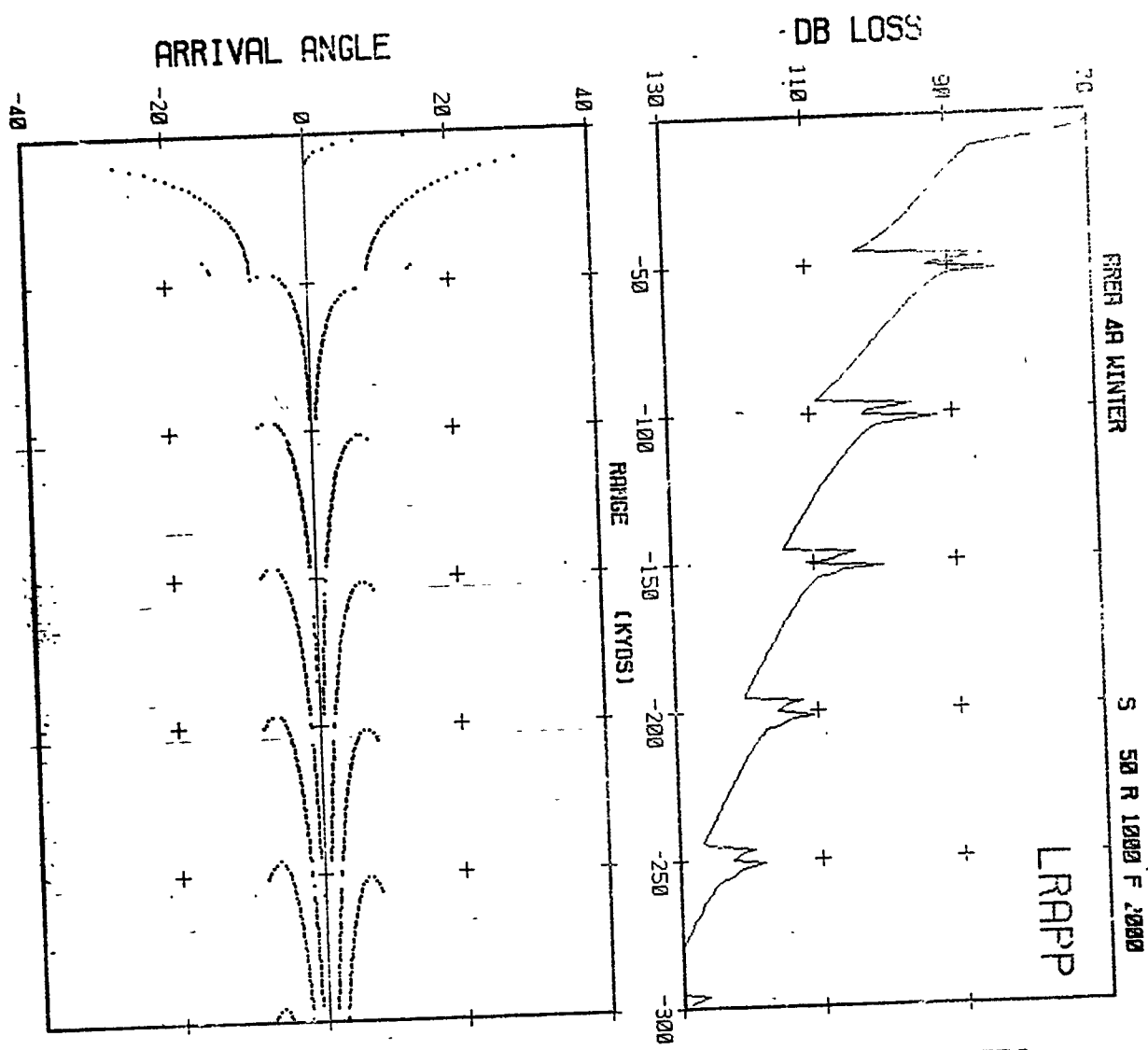
DEPTH IN METERS

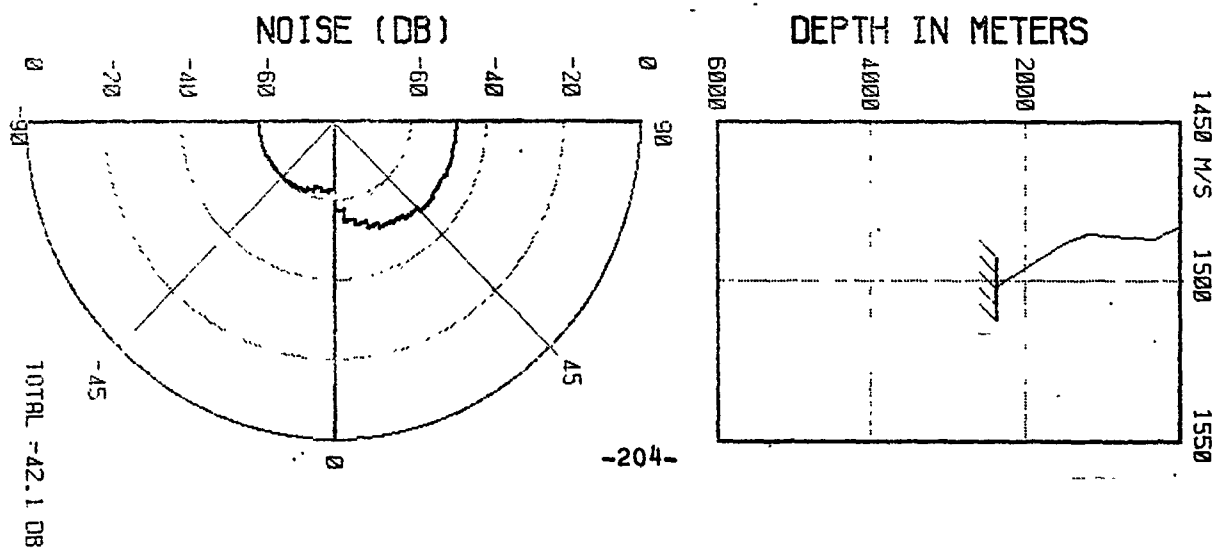
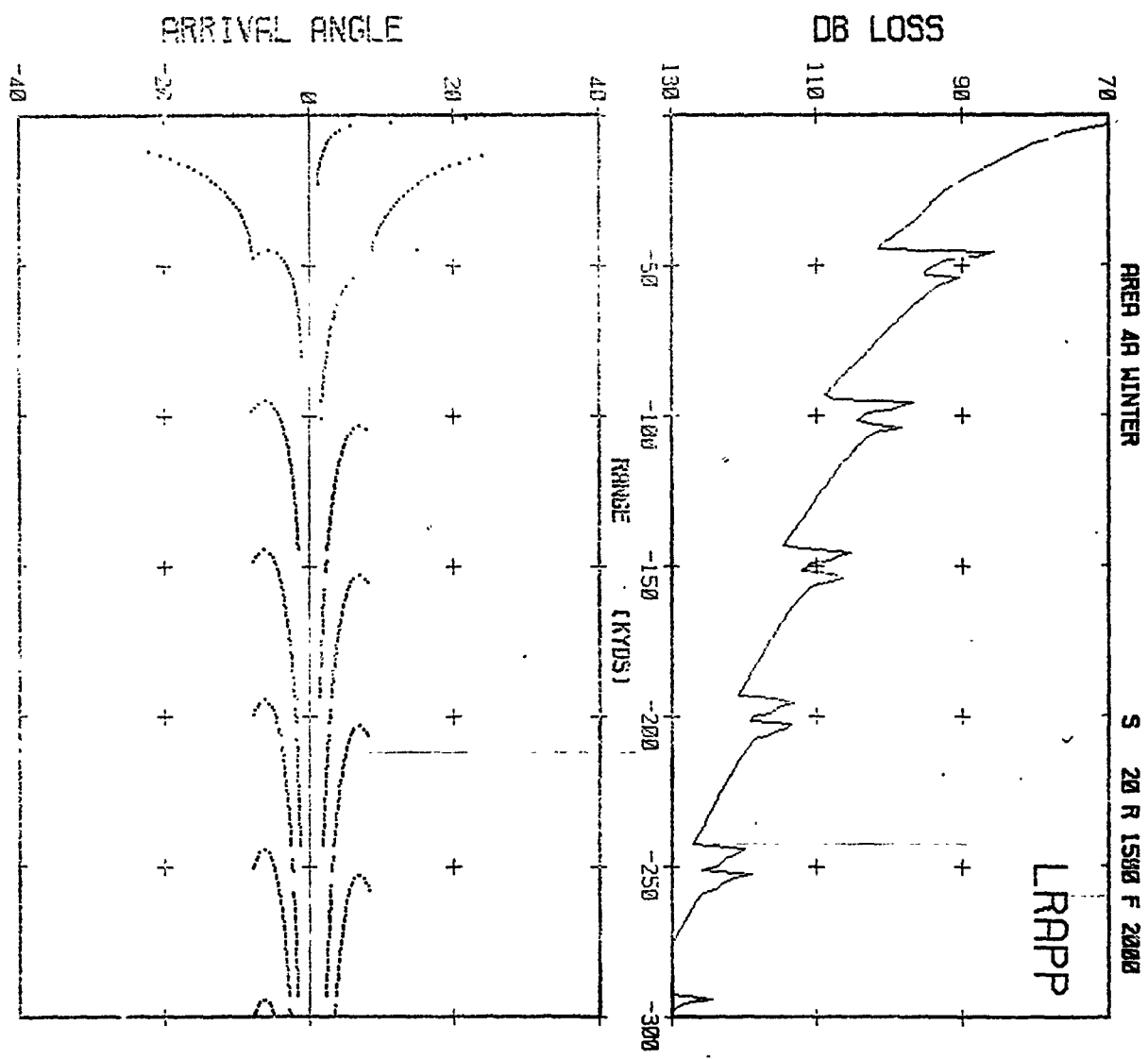


NOISE (DB)







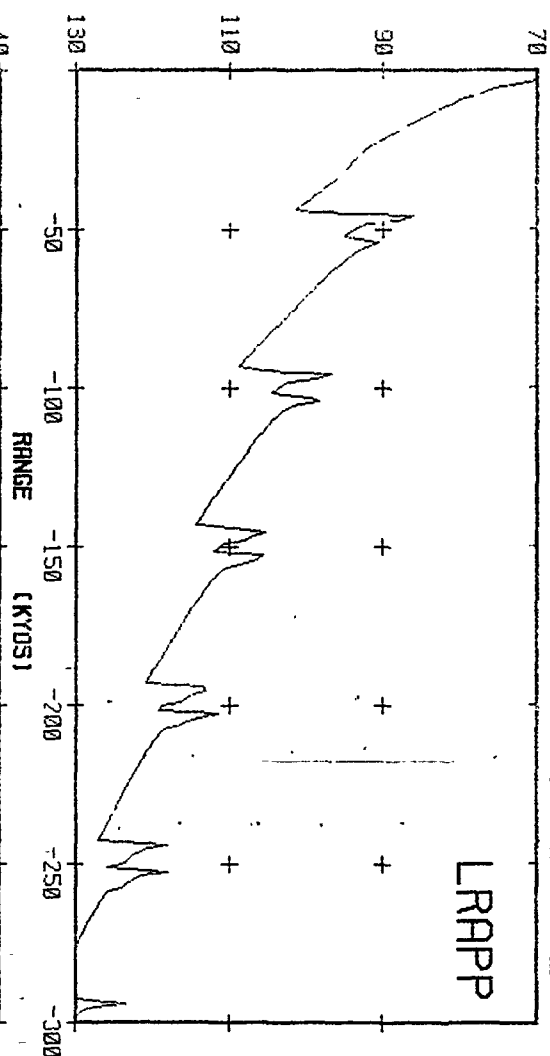


AREA 4A HINTER

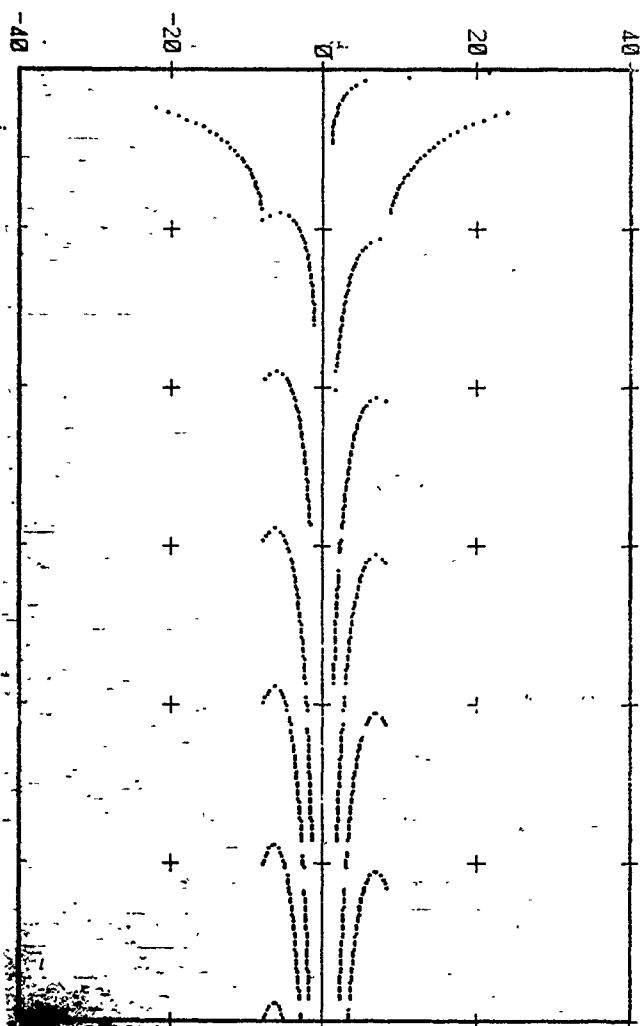
3 50 R 1500 F 2000

1450 M/S 1500 1550

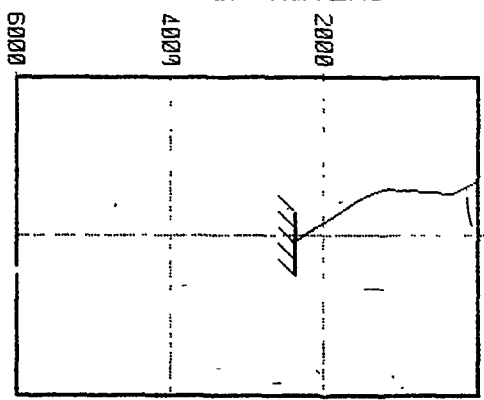
DB LOSS



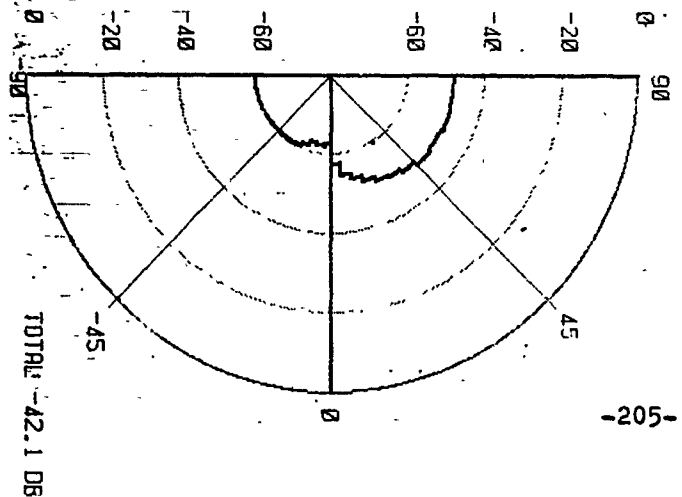
ARRIVAL ANGLE



DEPTH IN METERS



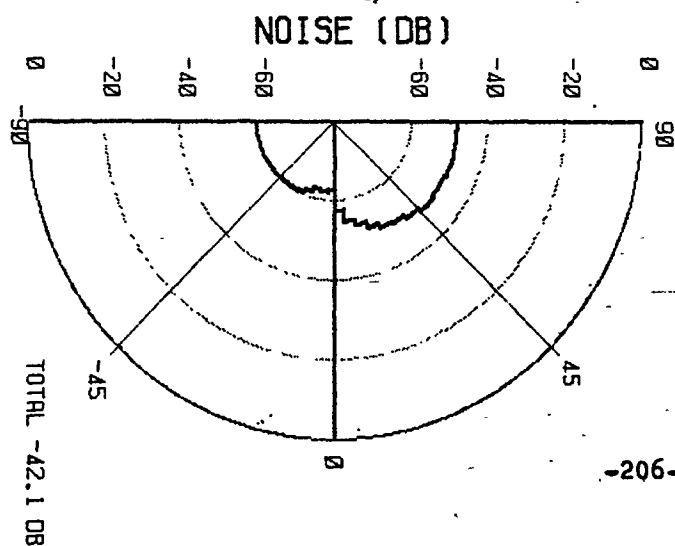
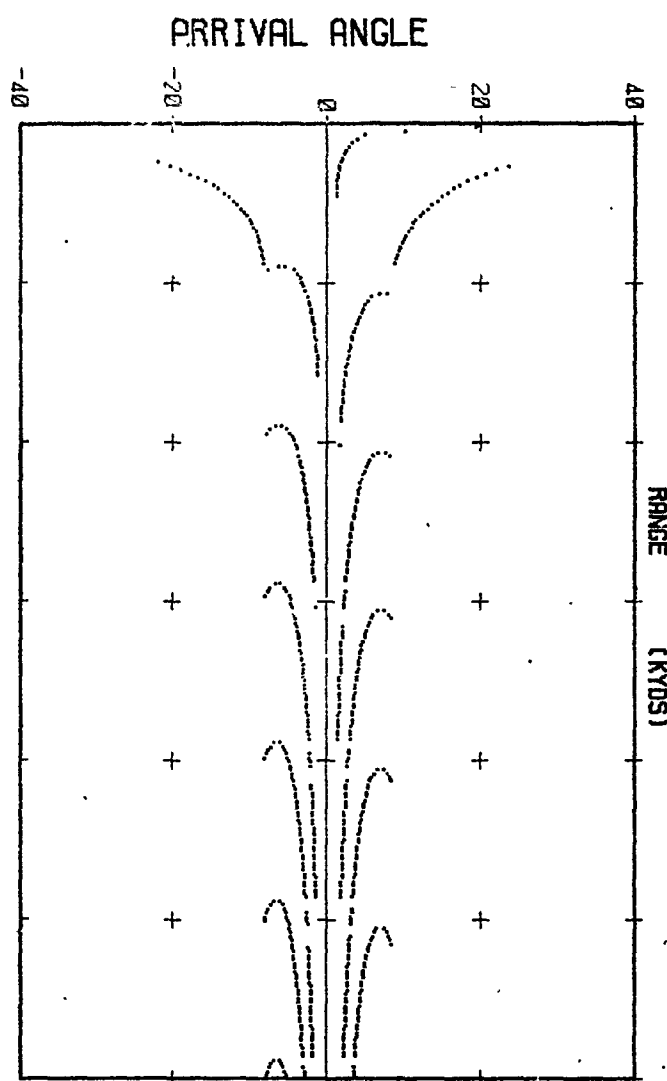
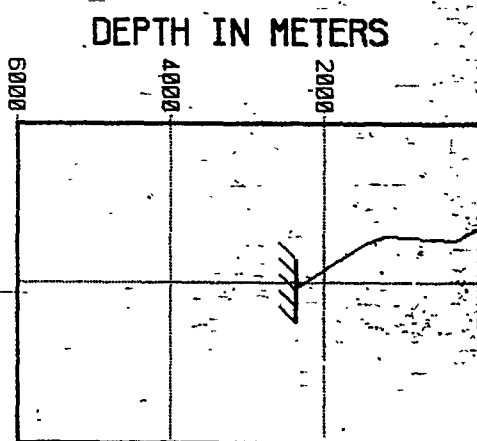
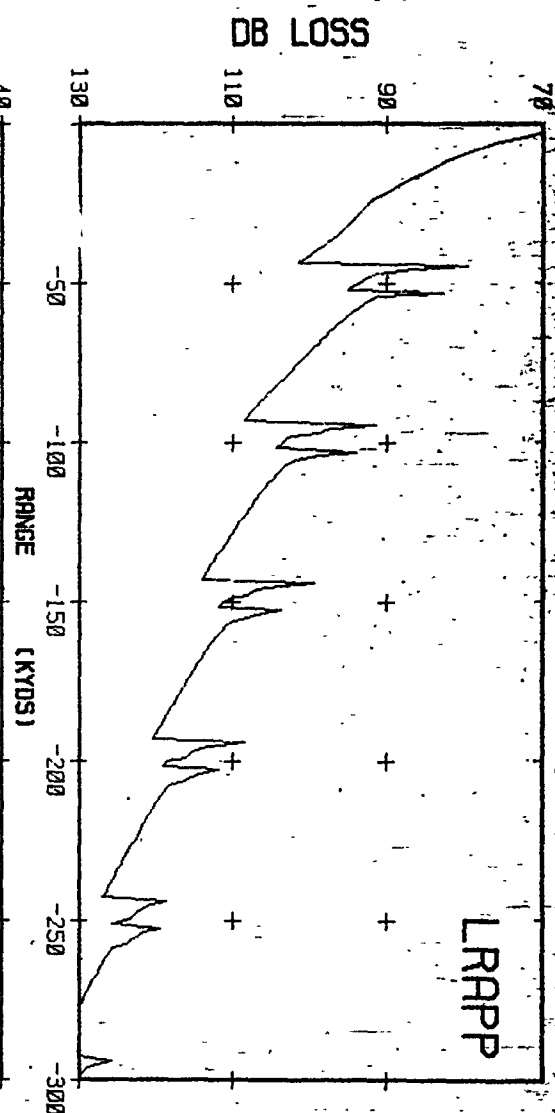
NOISE (DB)



THE WINNER

3 288 R 1588 F 2888

1450 W/S	1500	1550
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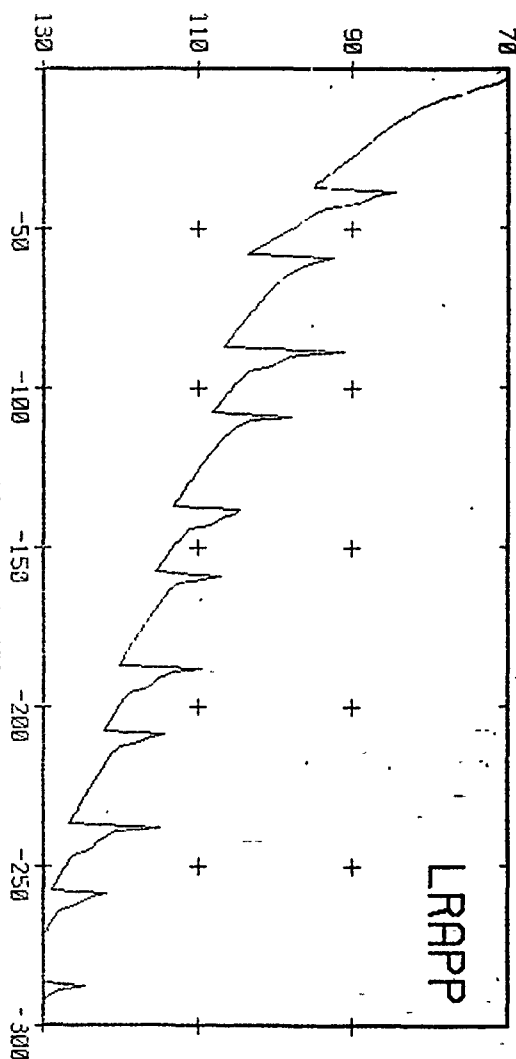
-206-

AREA 4R WINTER

S 50 R 3609 F 2000

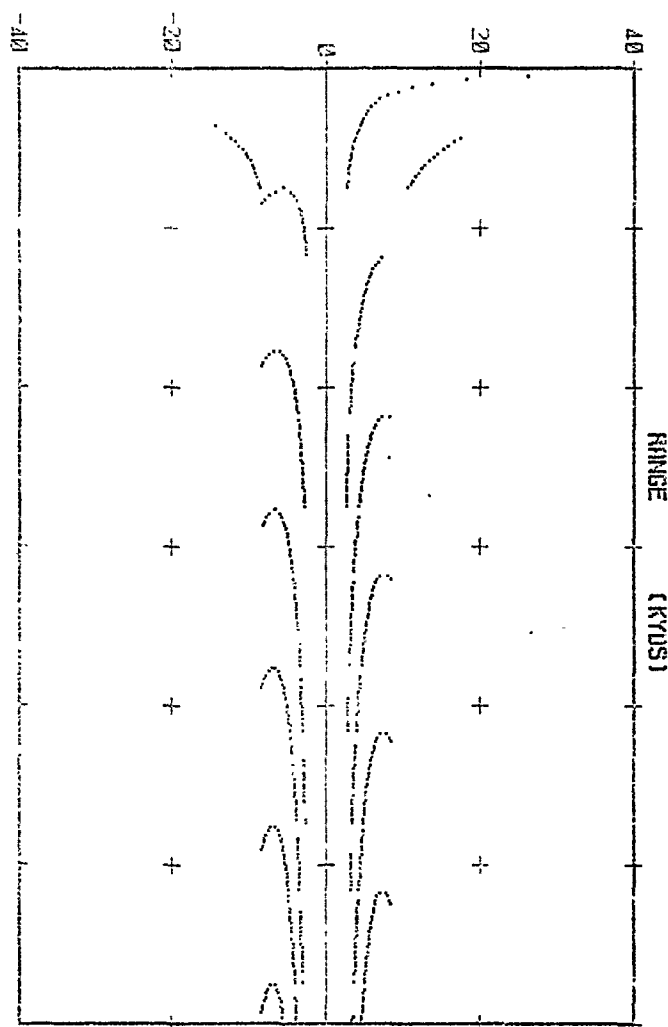
1450 M/S

DB LOSS

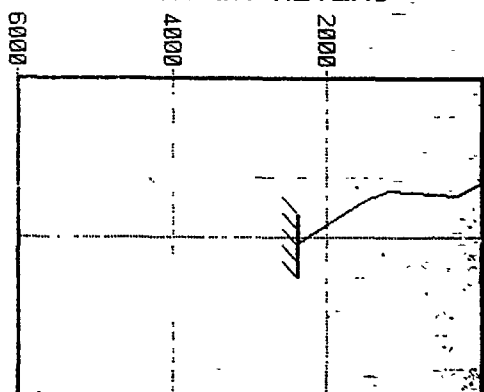


LRAPP

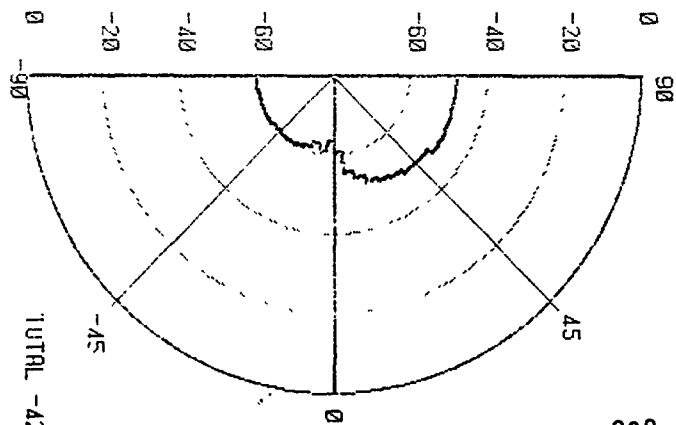
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

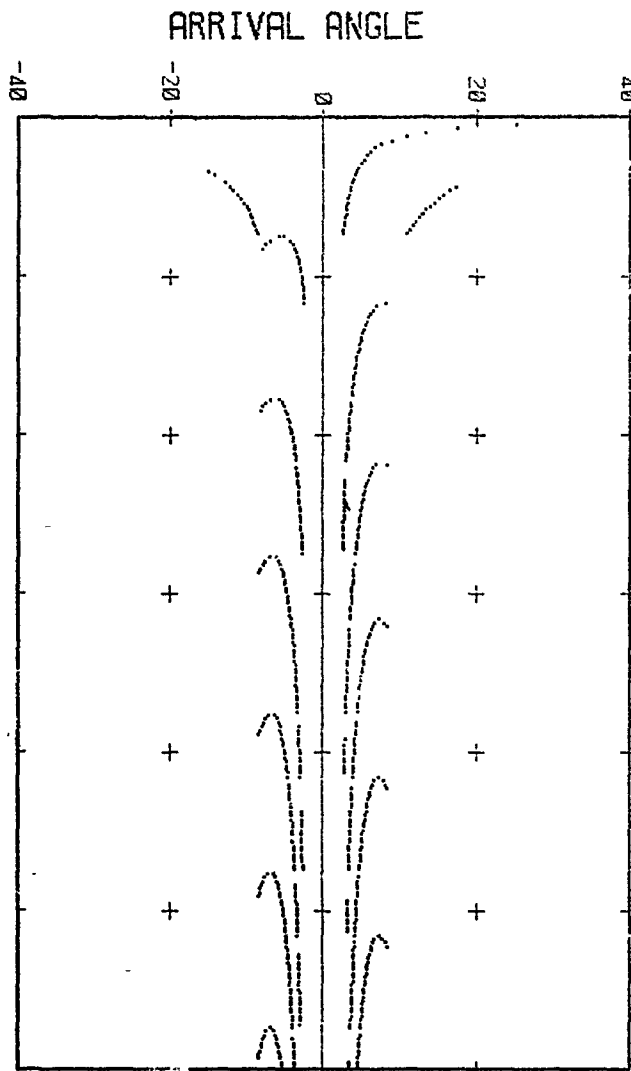
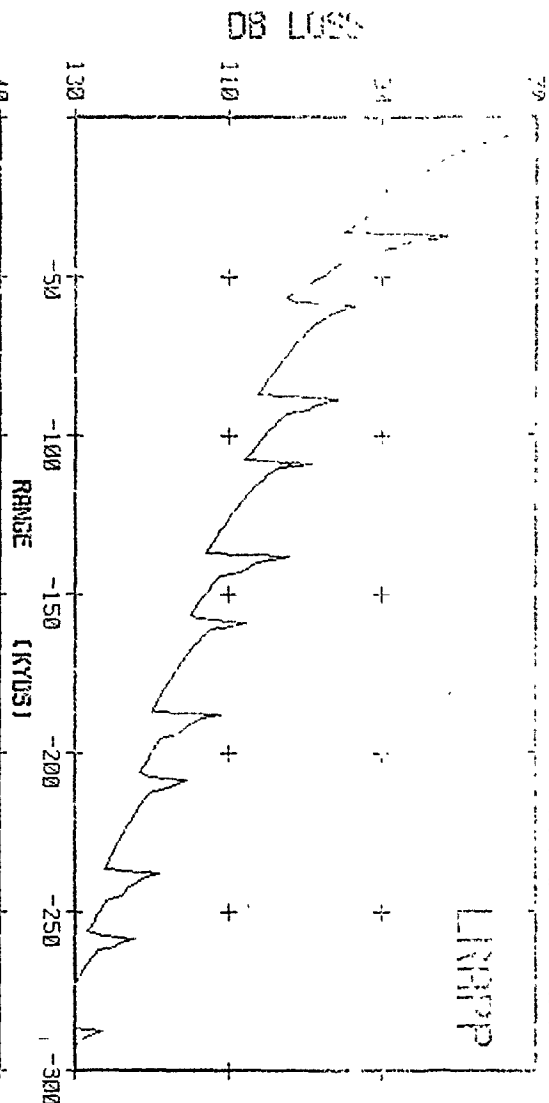


TOTRL -42.3 DB

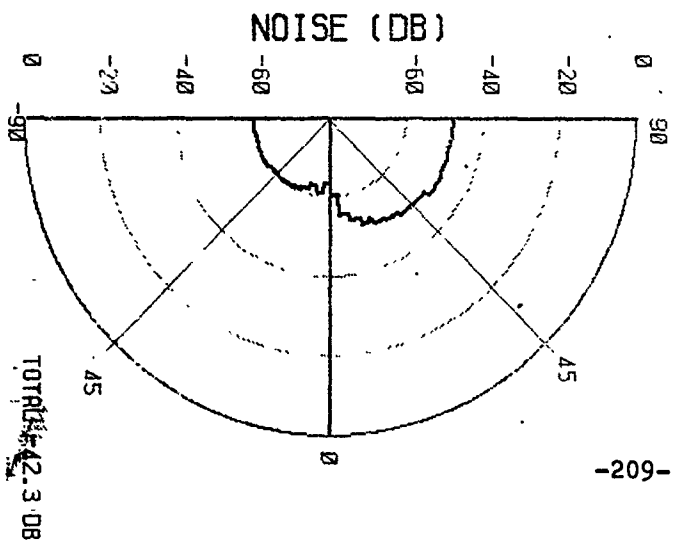
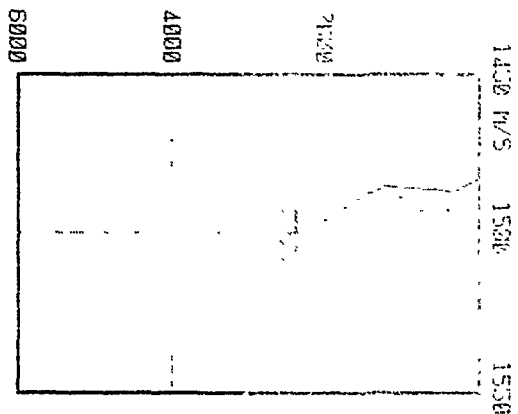
AREA 43 UNIDENT

S 2nd M 5000 F 7000

LRPP



DEPTH IN METERS

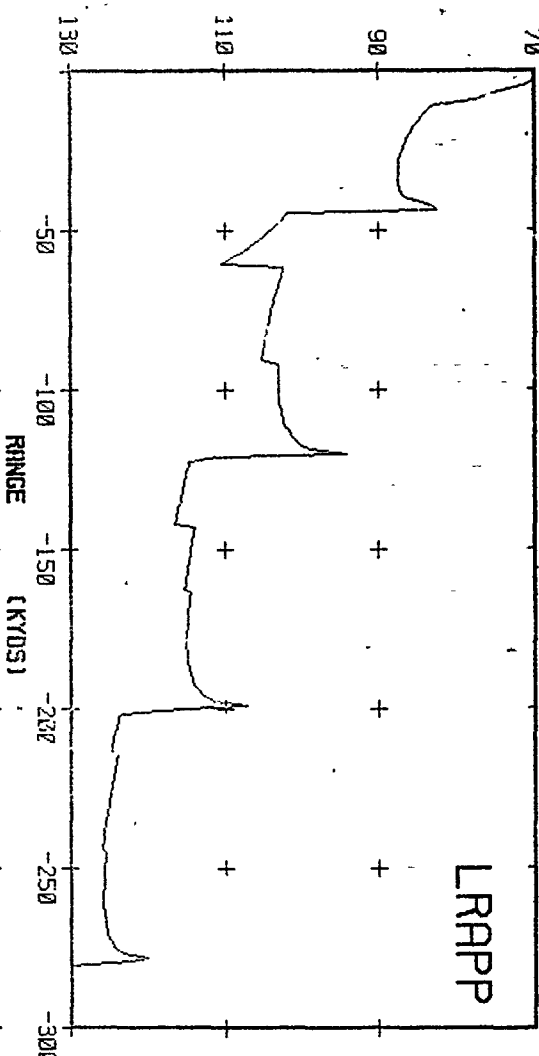


TOTAL 42.3 DB

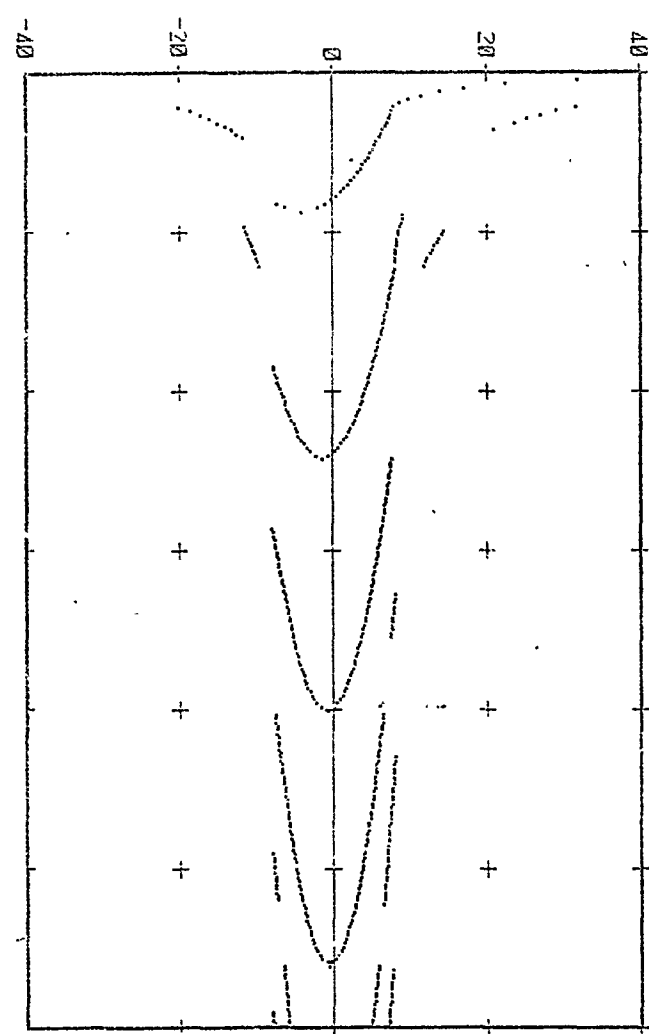
RRR AR WINTER

S 201R 4593 F 2000

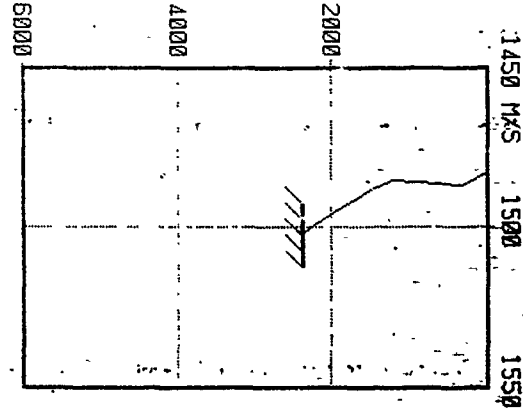
DB LOSS



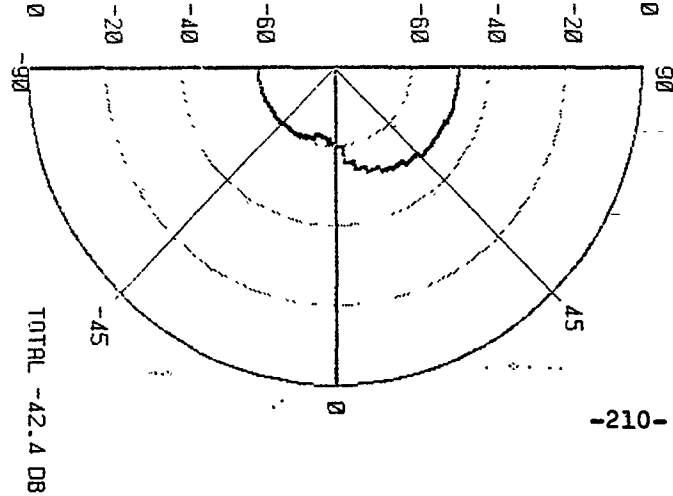
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)

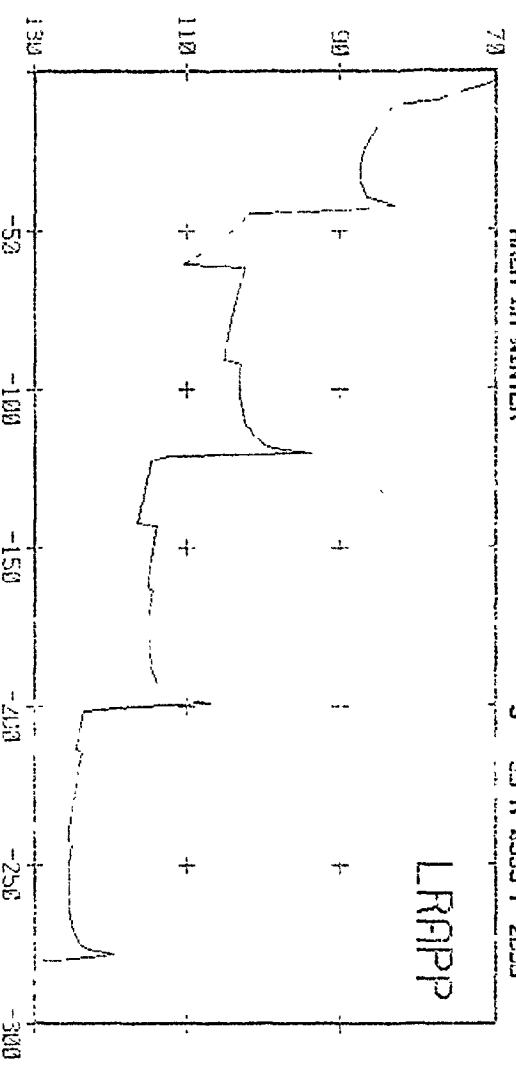


RIER AN UNIER

S SJ R ASUS F 2.00

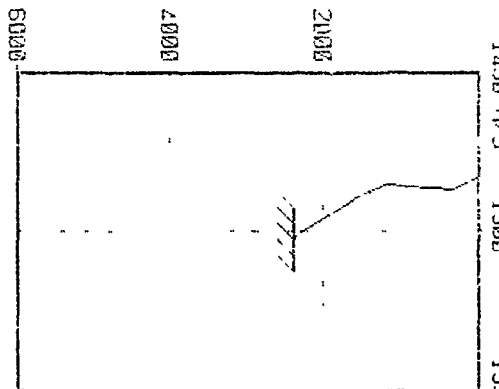
1450 M/S 1500 1550

DB LOSS

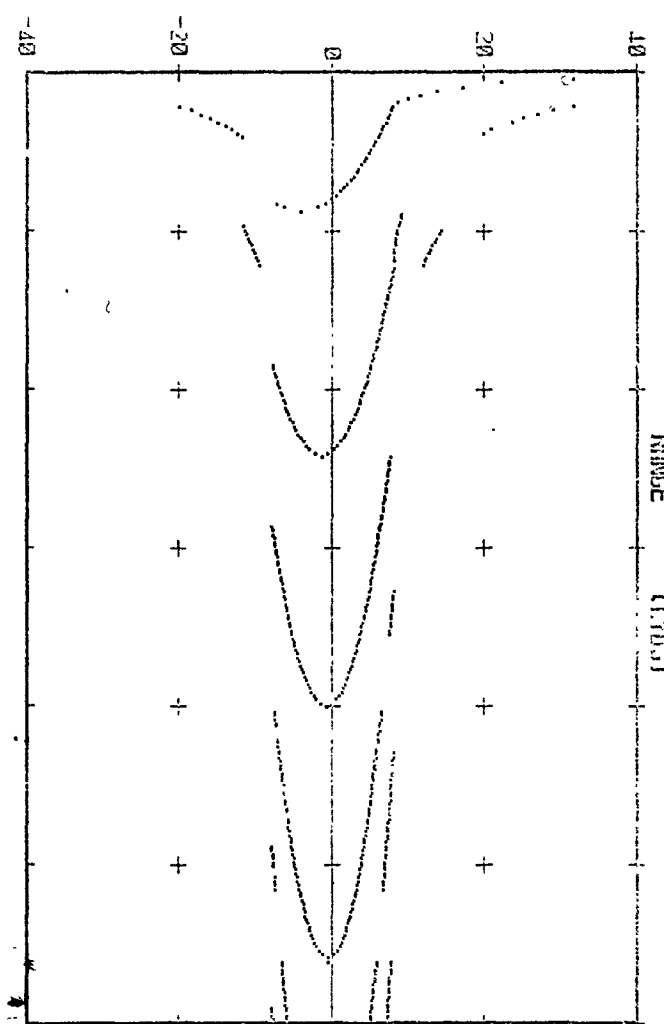


LRGPP

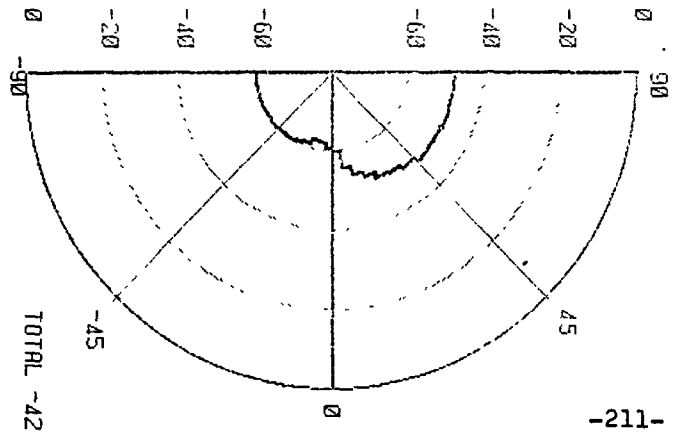
DEPTH IN METERS



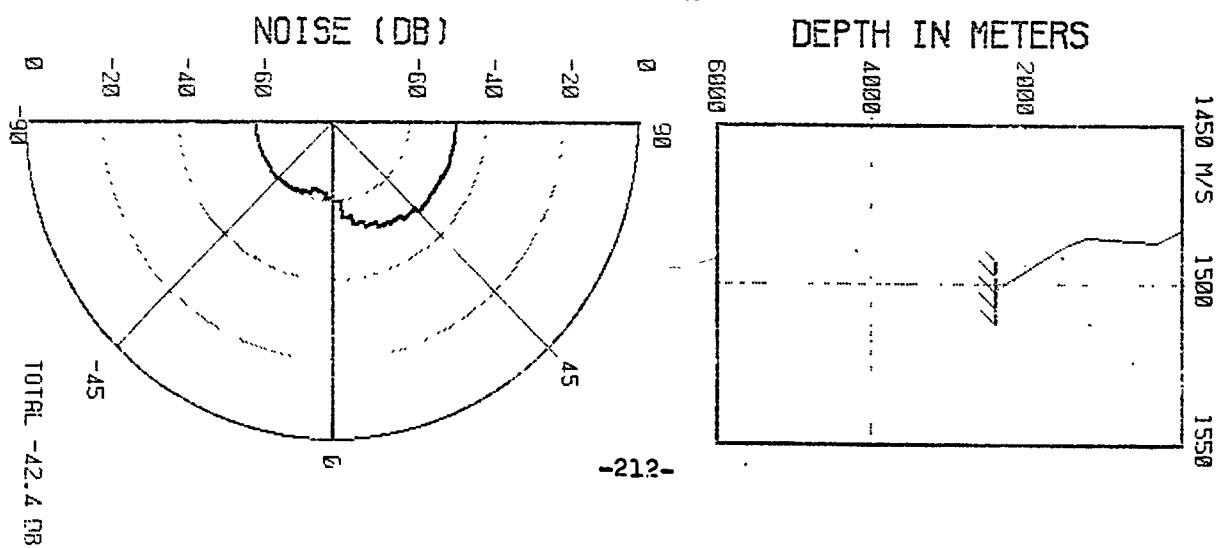
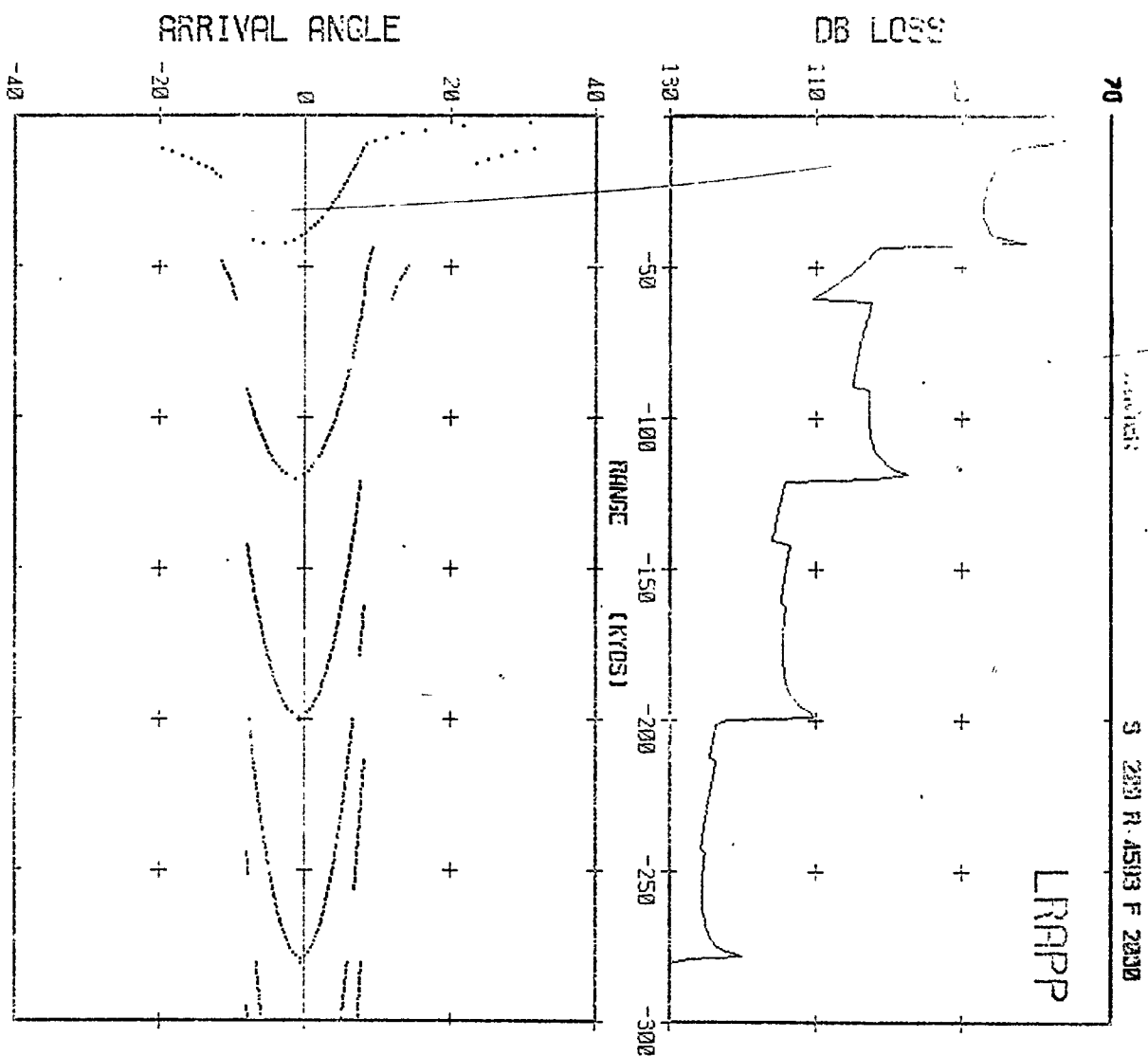
ARRIVAL ANGLE



NOISE (DB)



TOTAL -42.4 DB

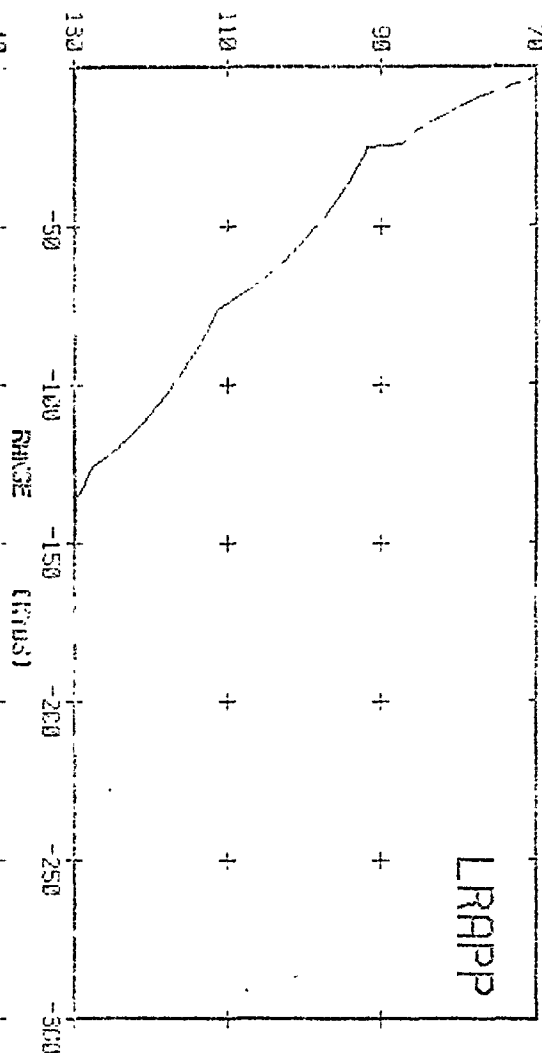


PREP 40 MINUTER

S 20 R 7750 P 2030

1450 M/S 1500 1550

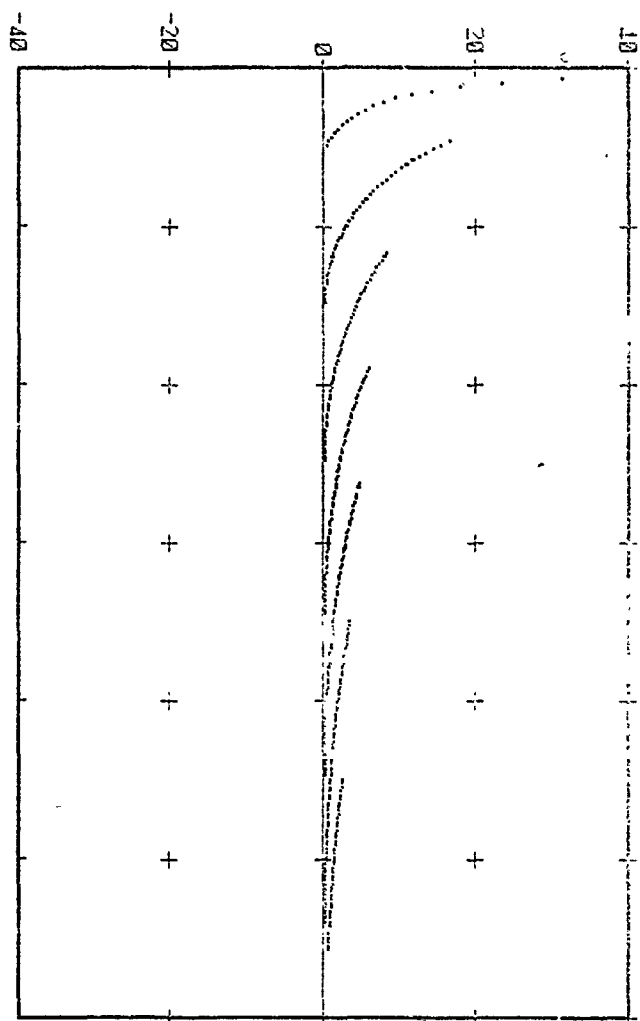
DB LOSS



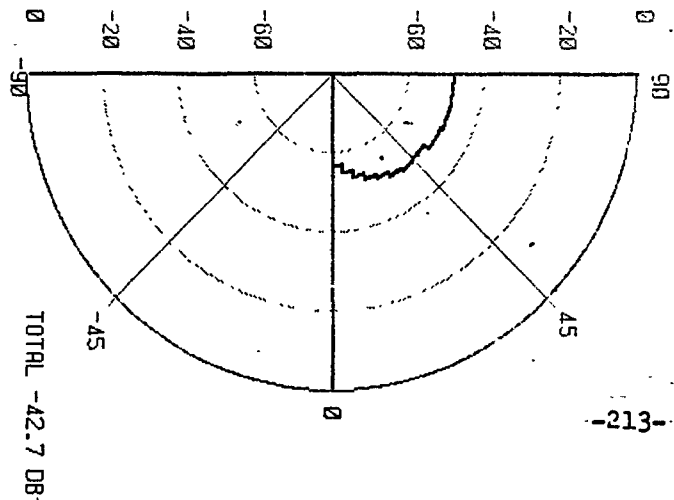
DEPTH IN METERS



ARRIVAL ANGLE



NOISE (DB)

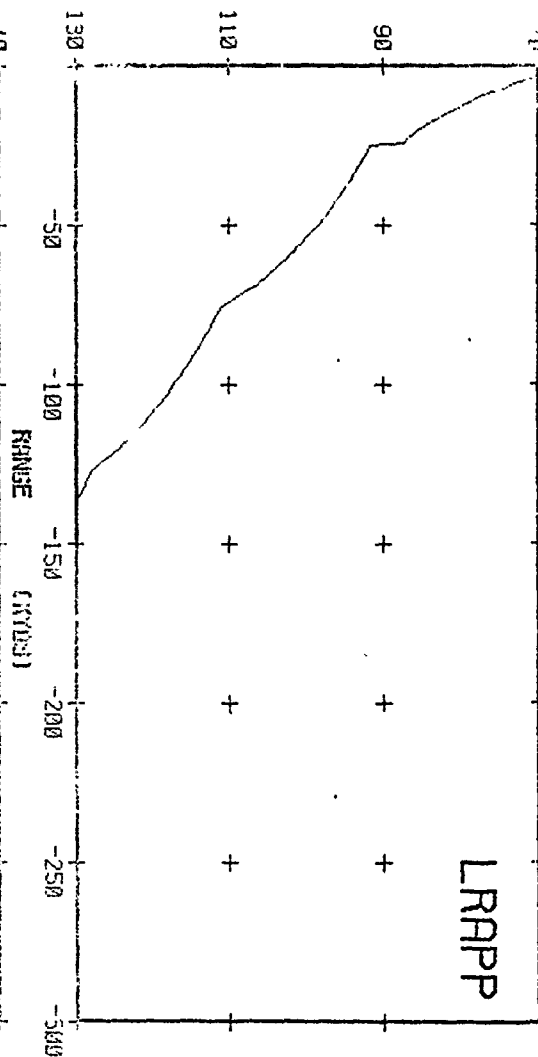


AREA AIR WINTER

S SQ R 7798 F 2690

1450 M/S 1500 1550

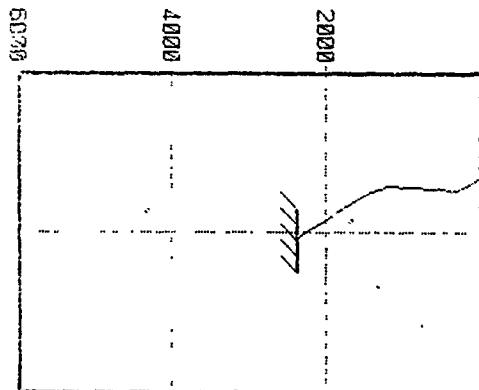
DB LOSS



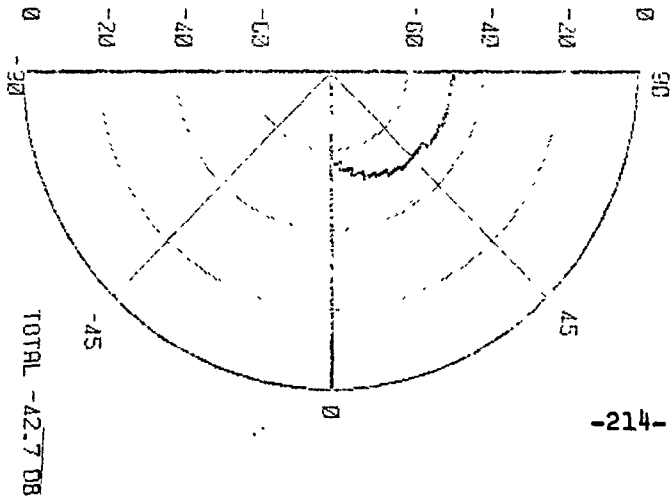
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



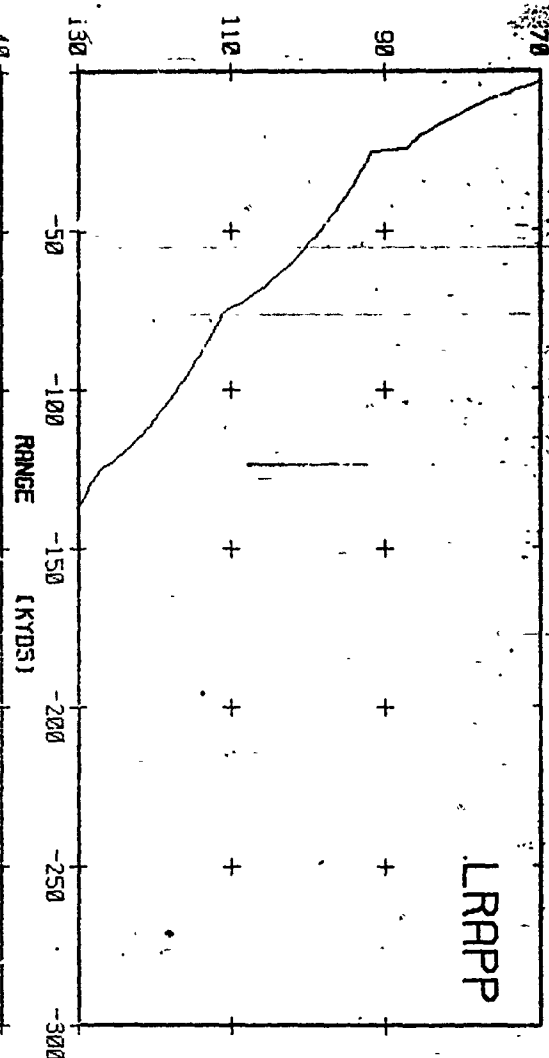
POWER AR HUNTER

S 200 R 7700 F 2000

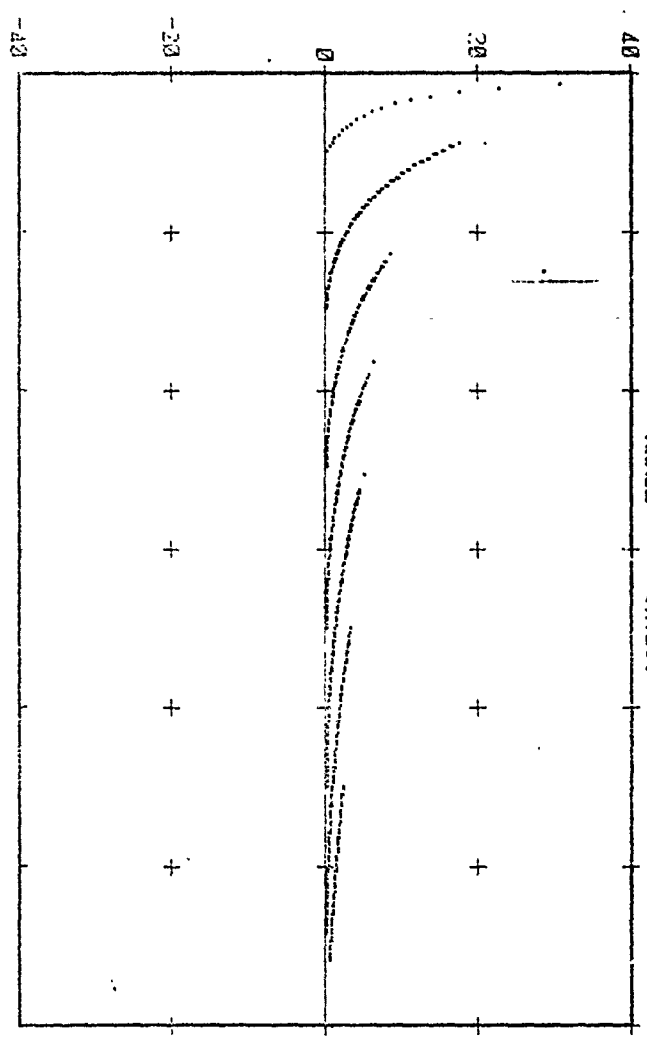
1450 M/S 1500

1530

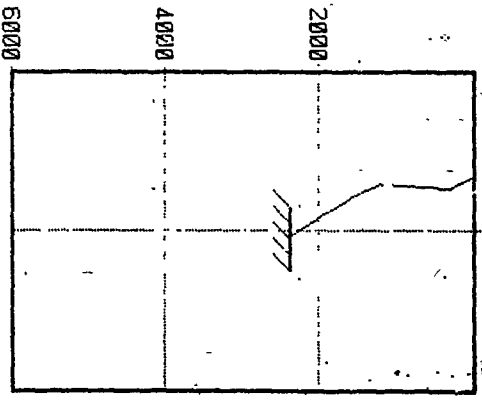
DB LOSS



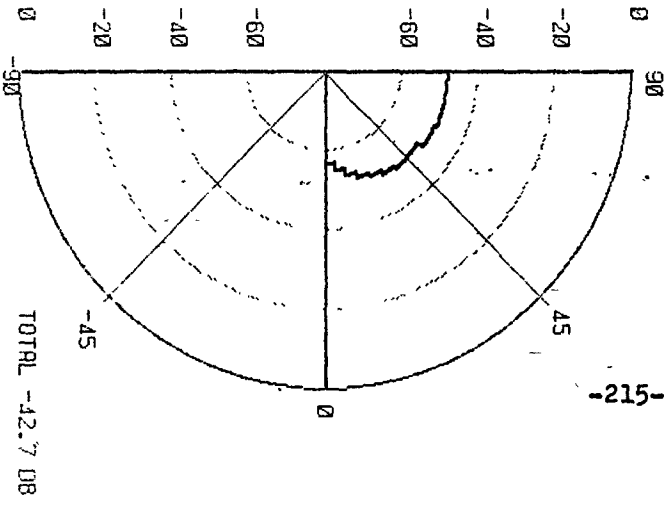
ARRIVAL ANGLE



DEPTH IN METERS

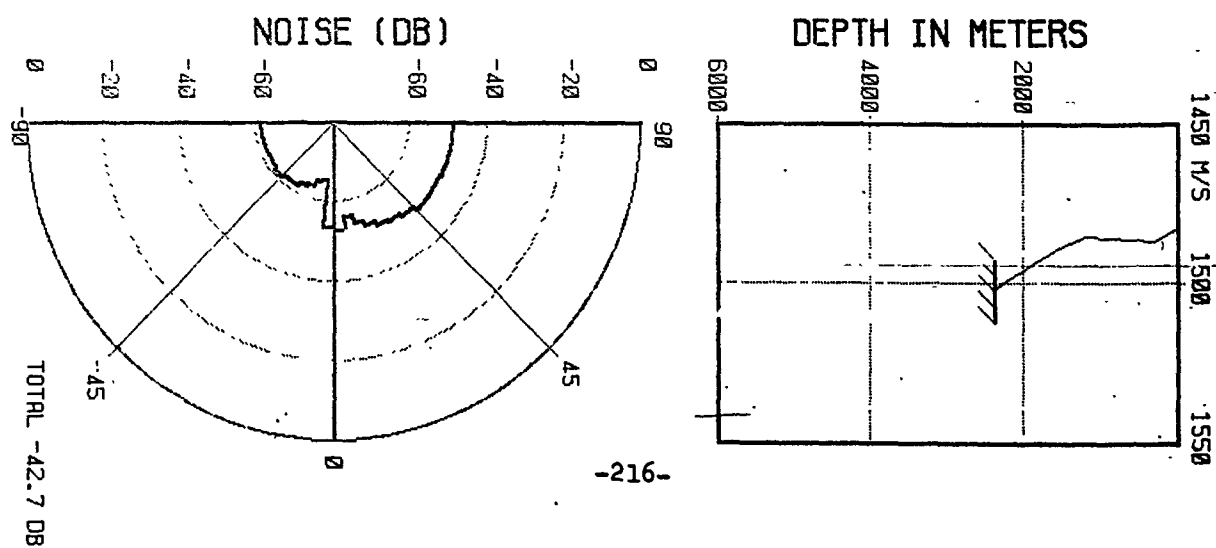
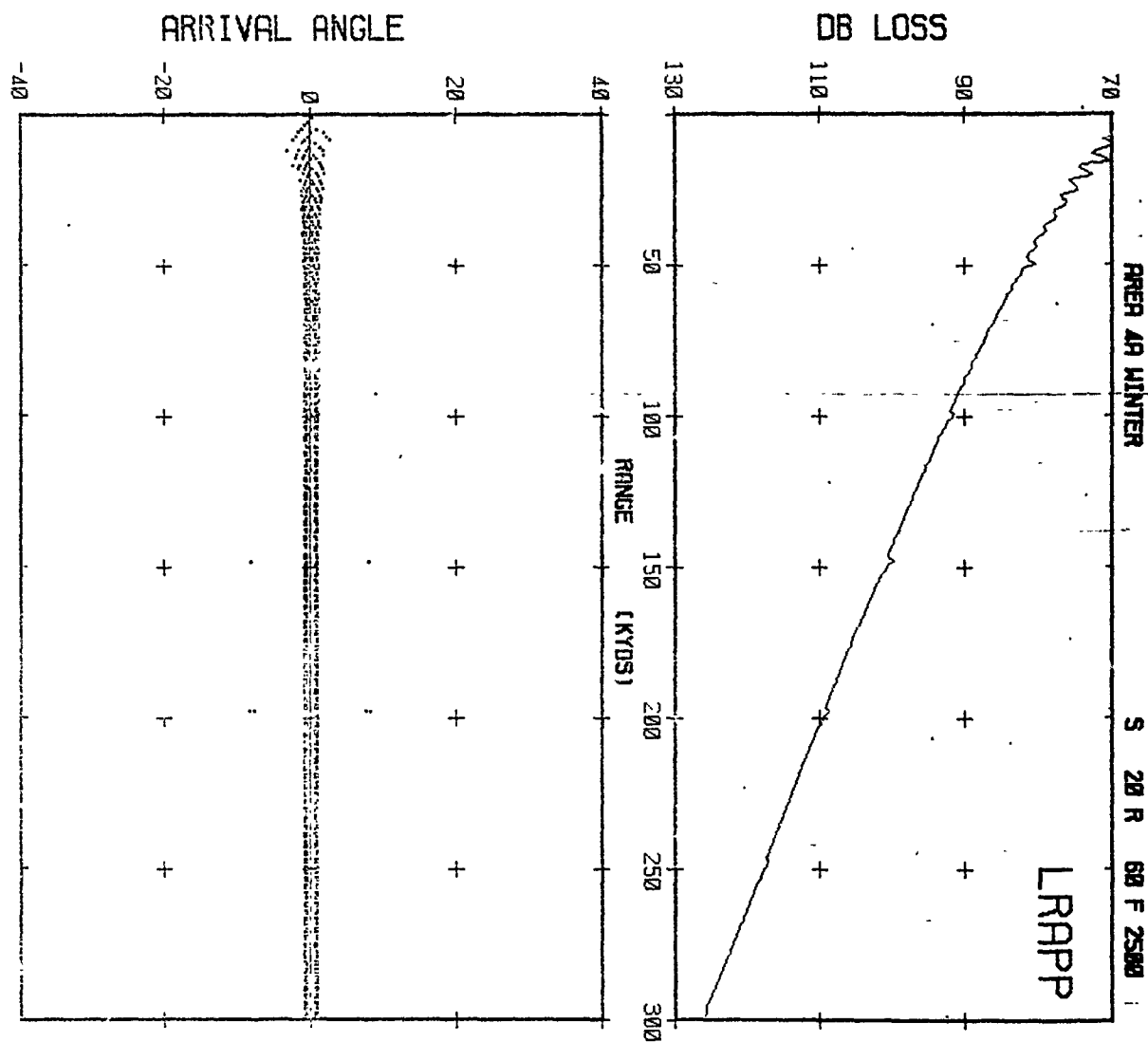


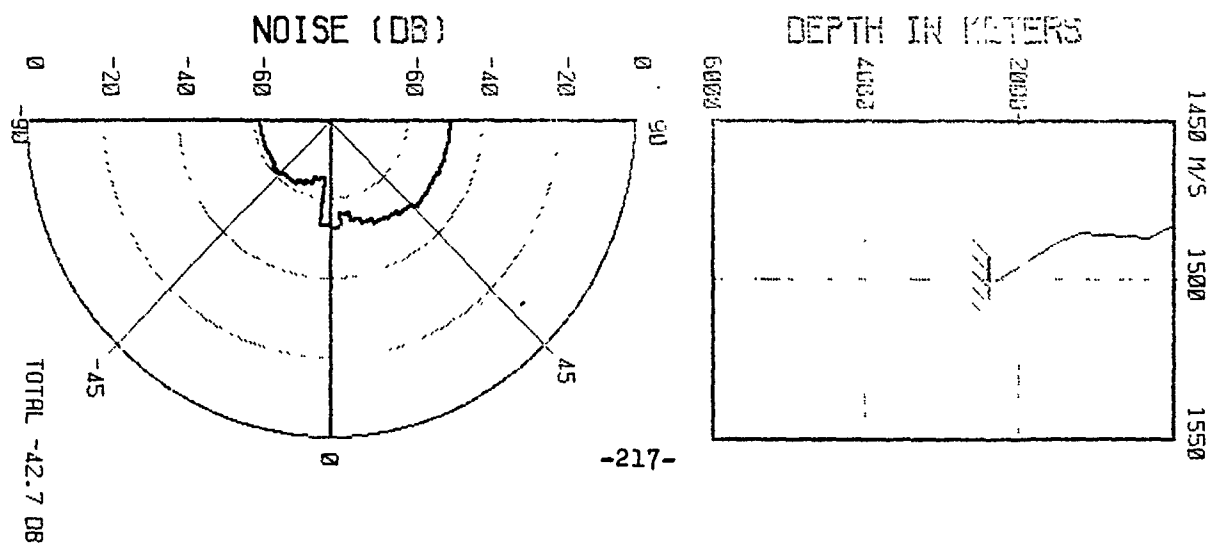
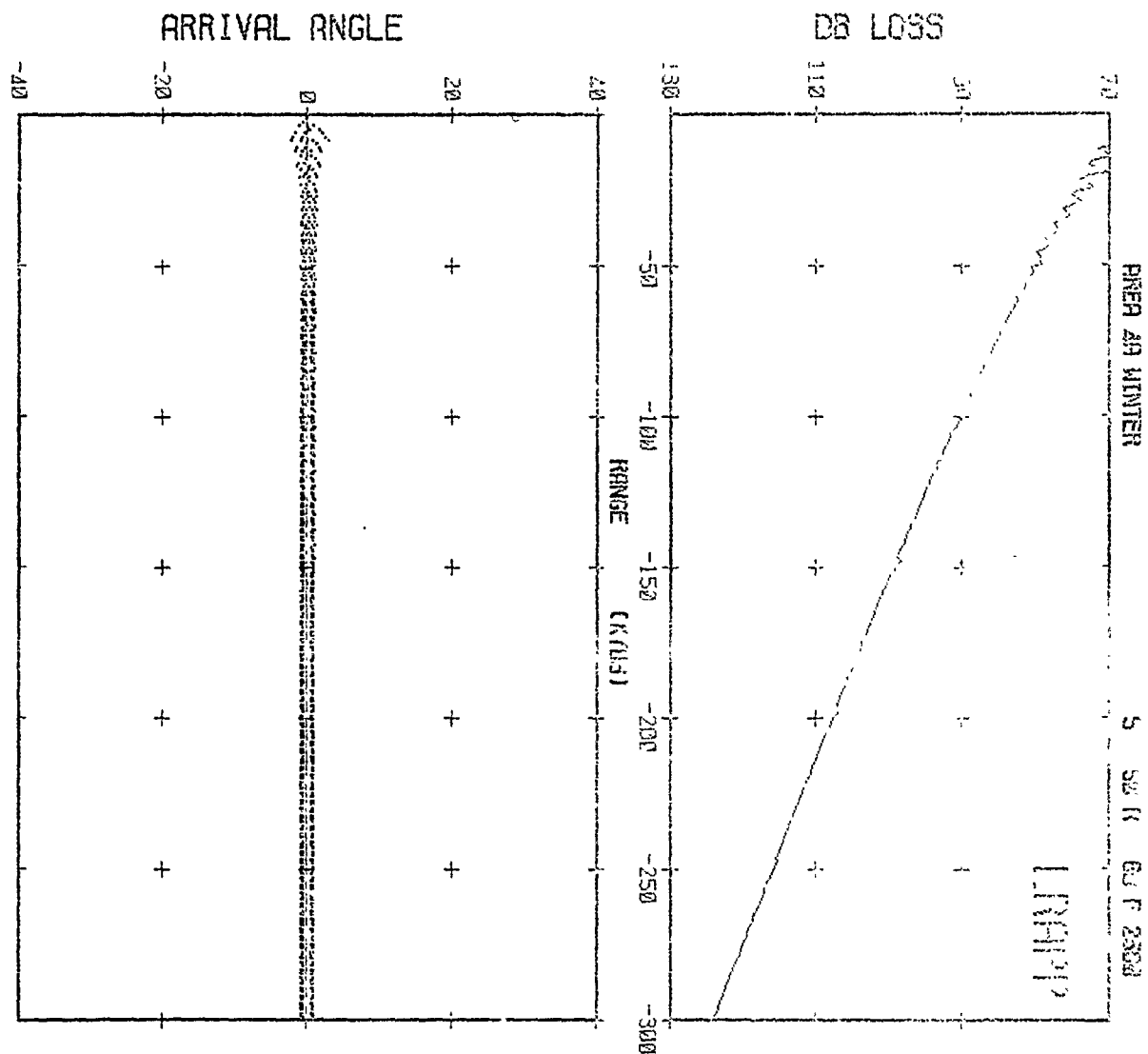
NOISE (DB)



-215-

TOTRL -42.7 DB



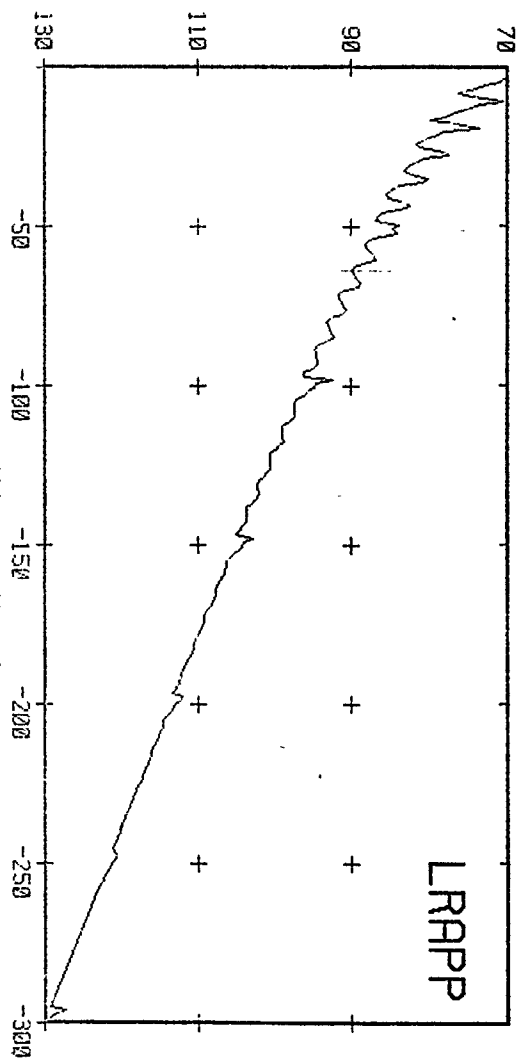


AREA 4A WINTER

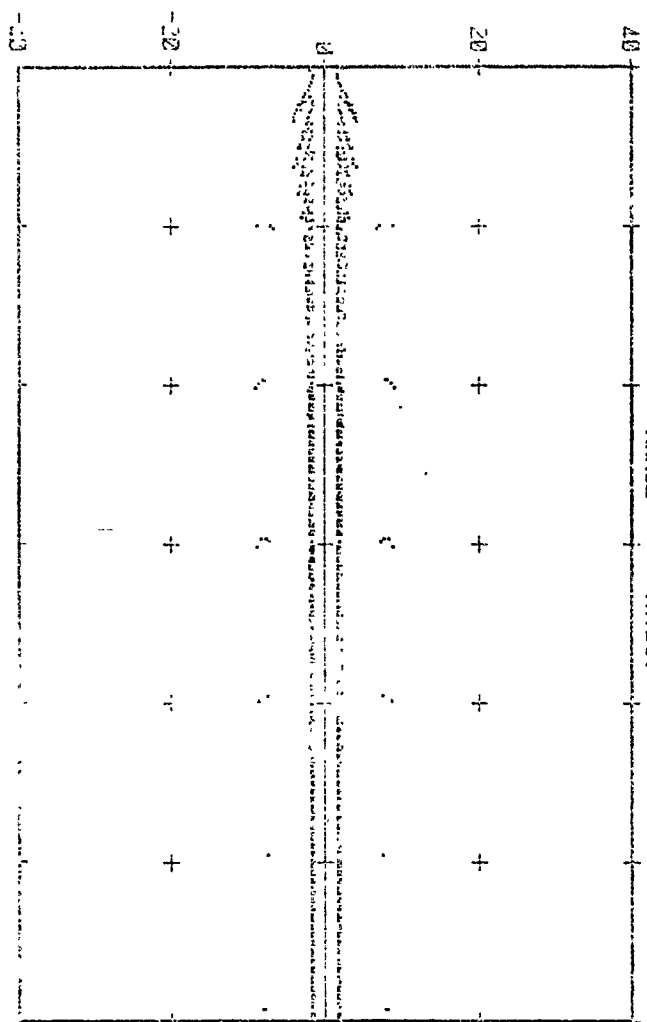
S 200 R 60 F 2500

1450 M/S 1500 1550

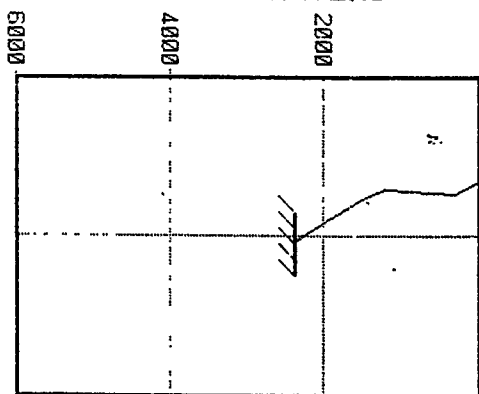
DB LOSS



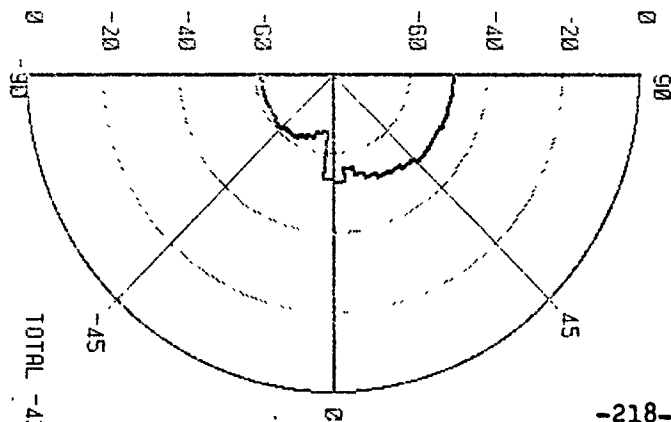
ARRIVAL ANGLE

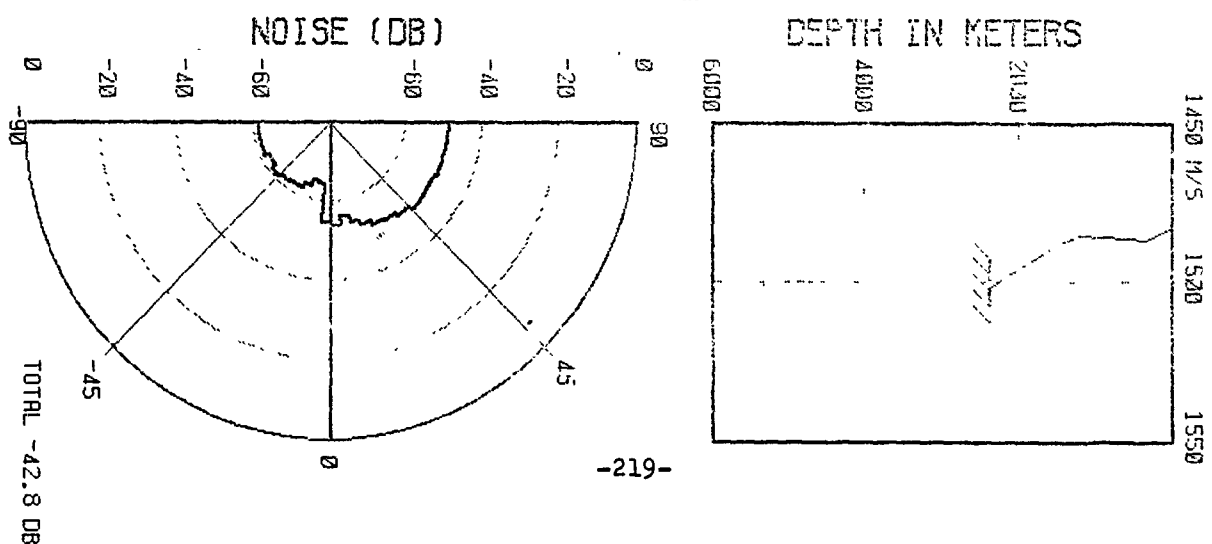
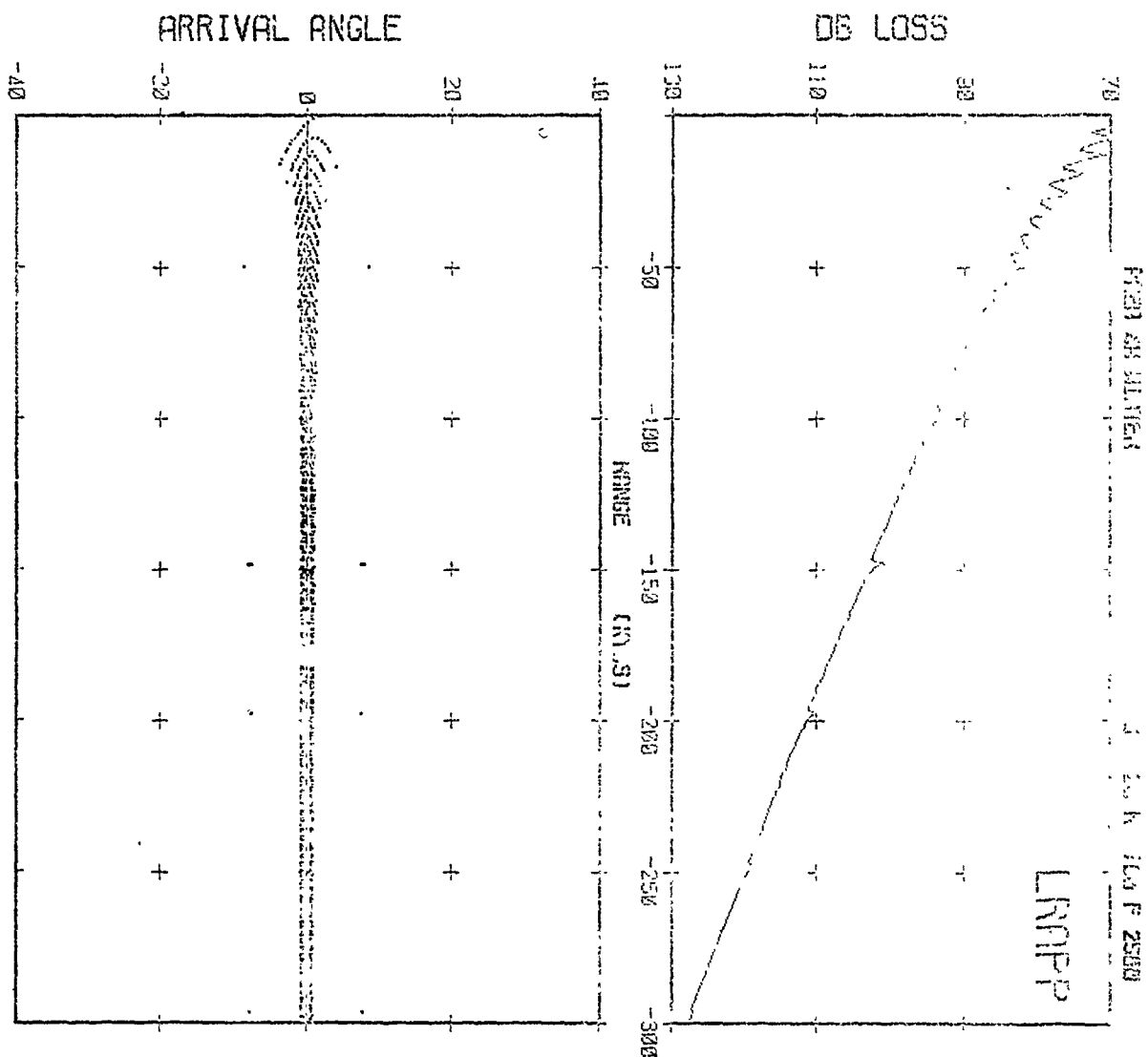


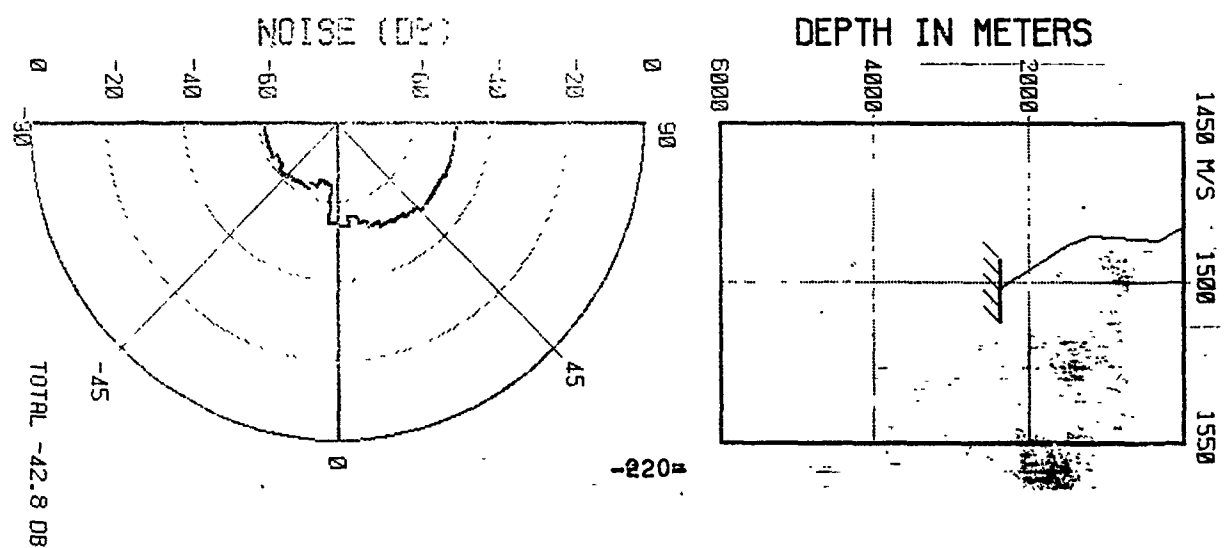
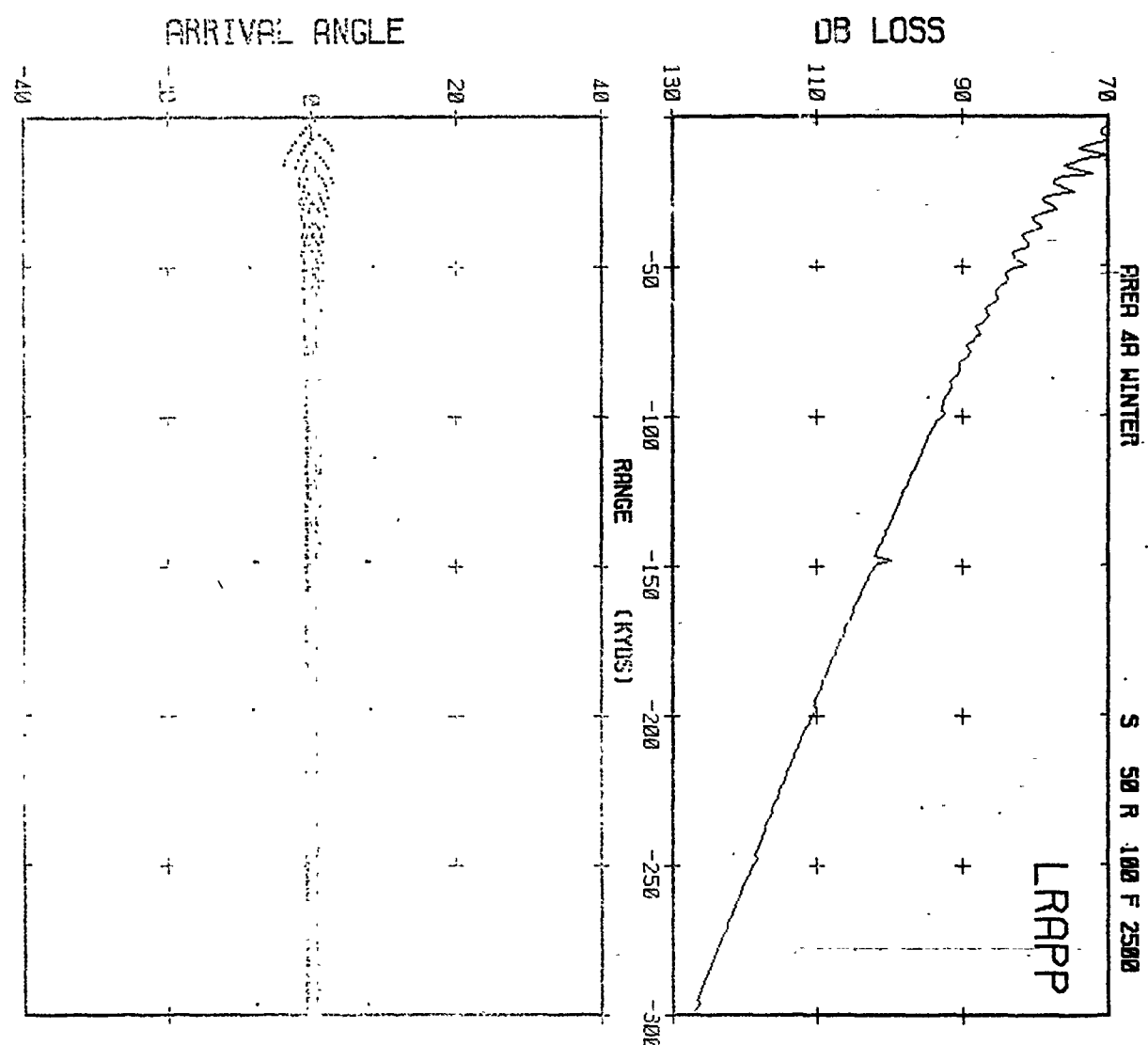
DEPTH IN METERS



NOISE (DB)



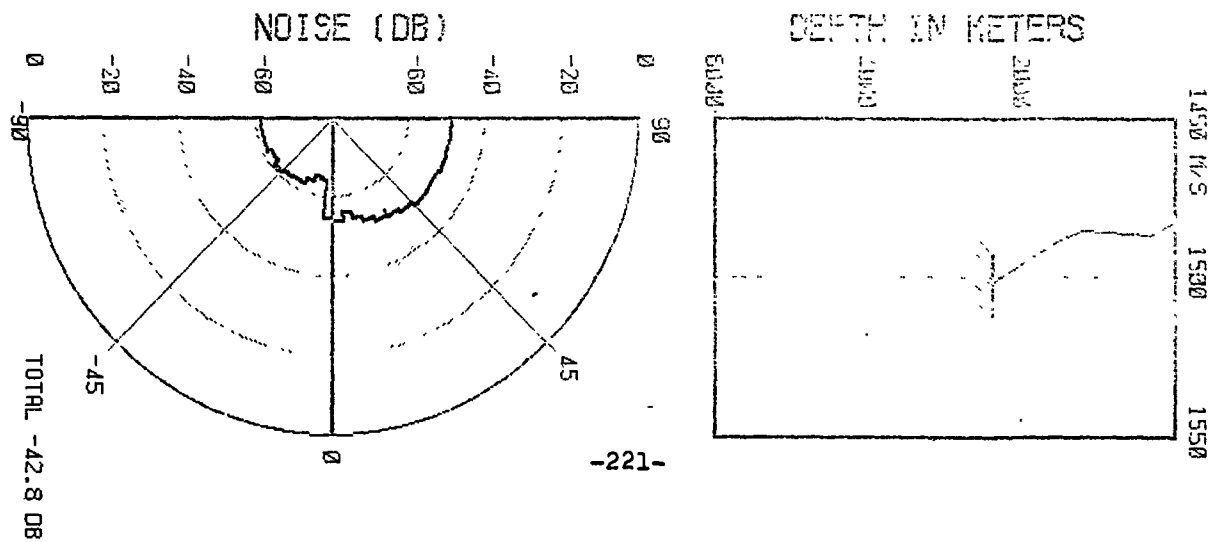
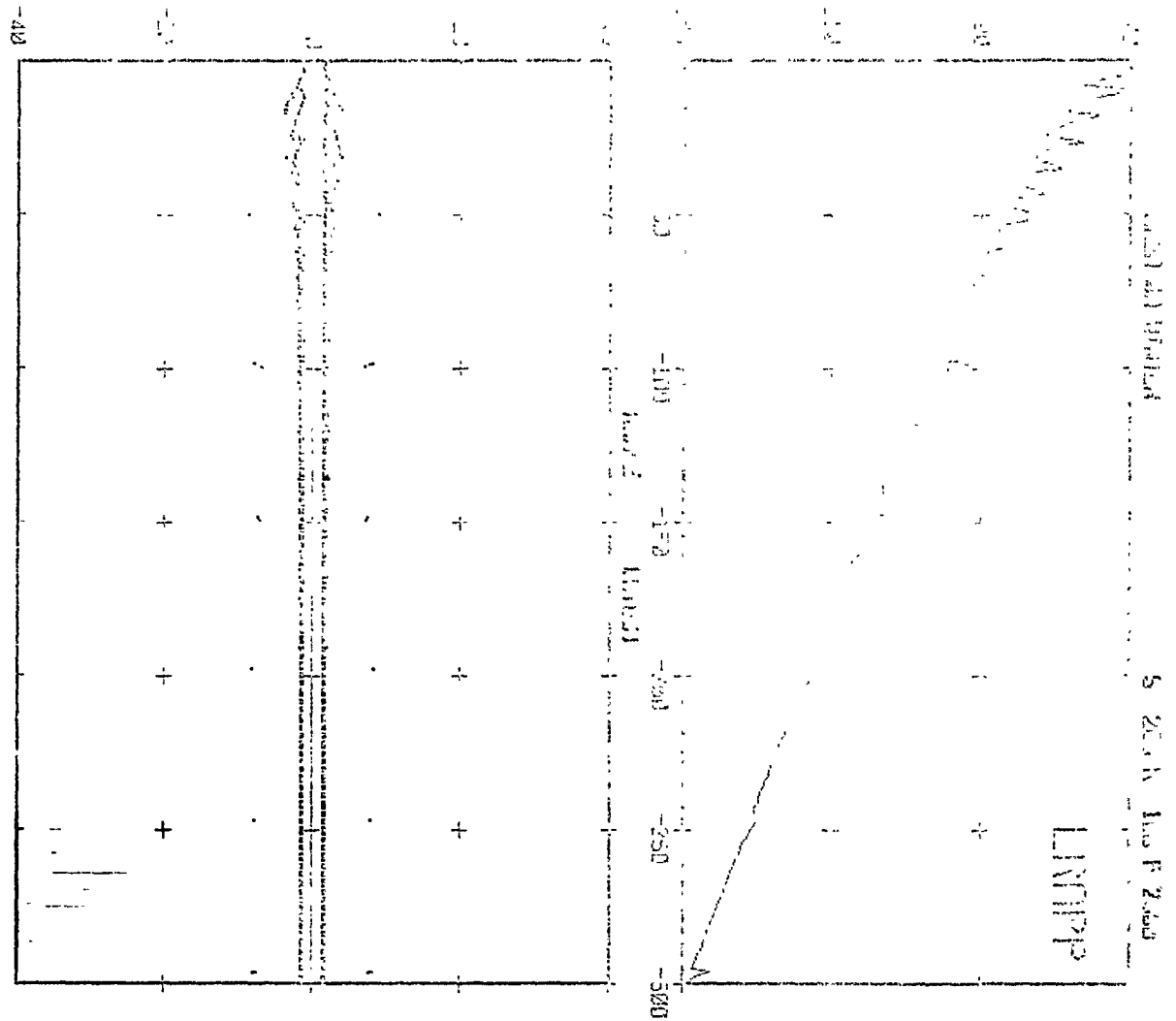


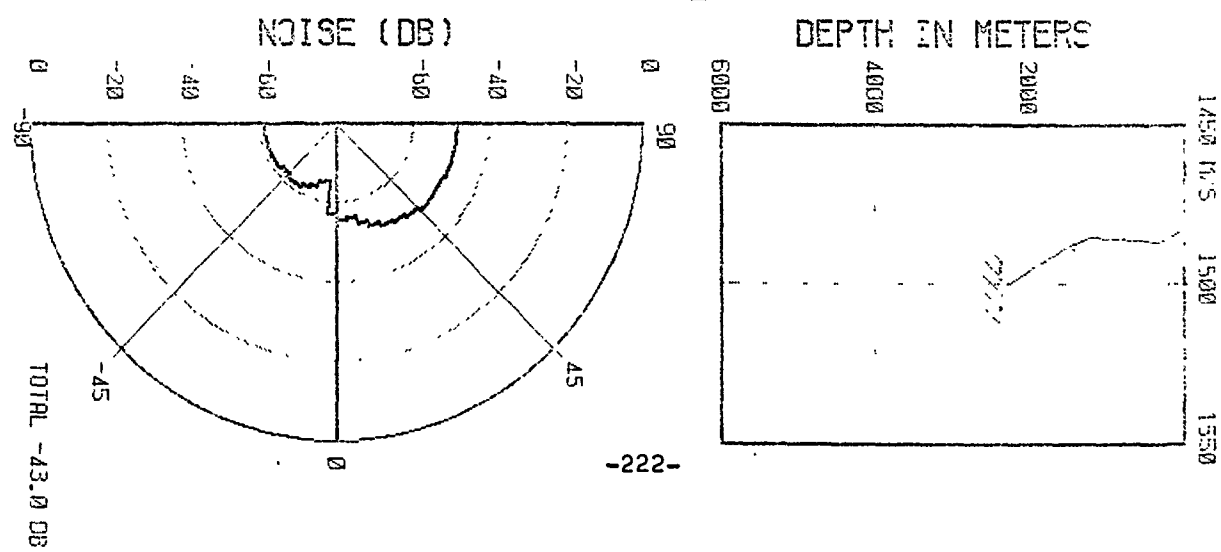
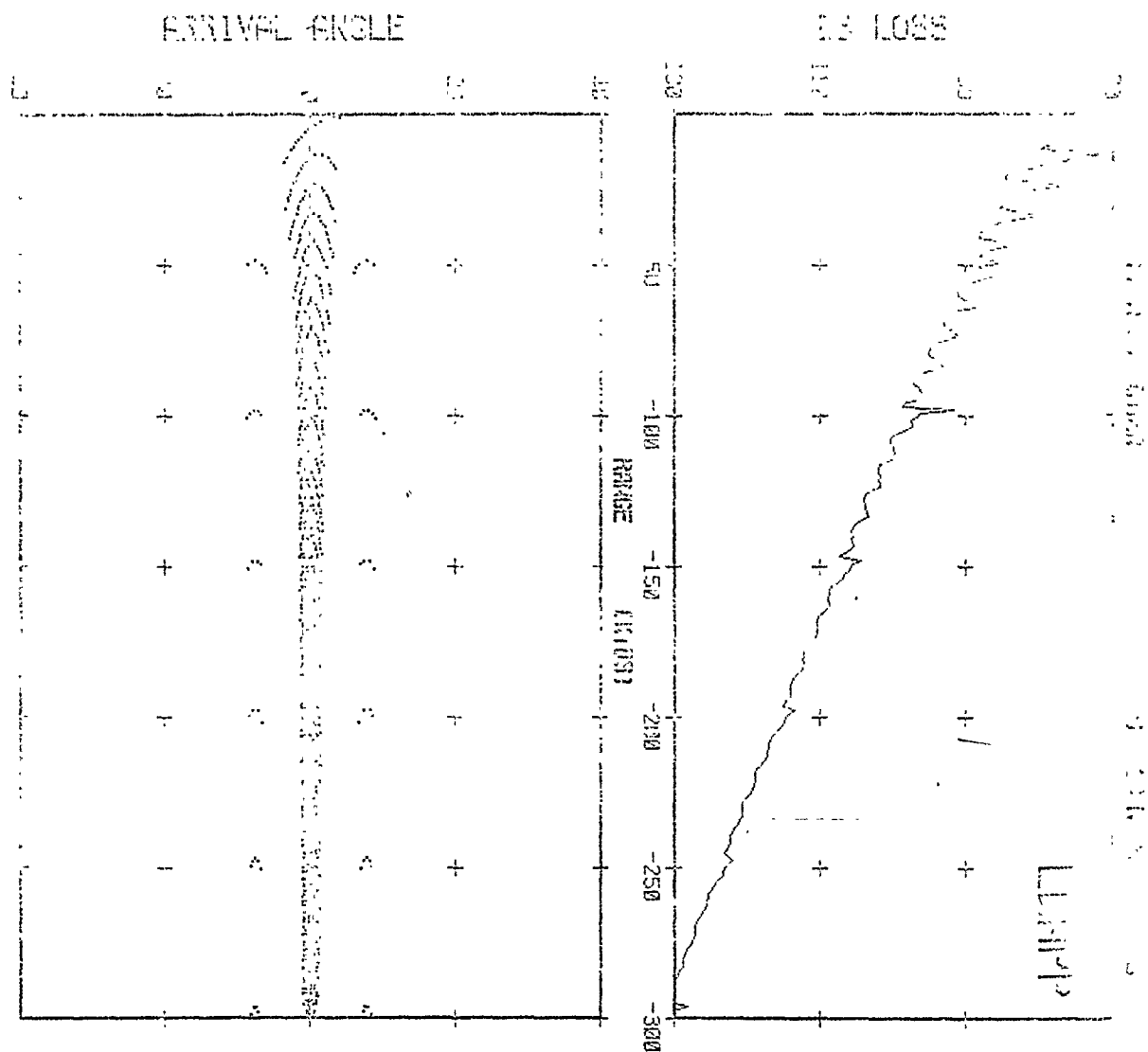


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 permit fully legible reproduction

ORIGINAL DATA

15 10 39



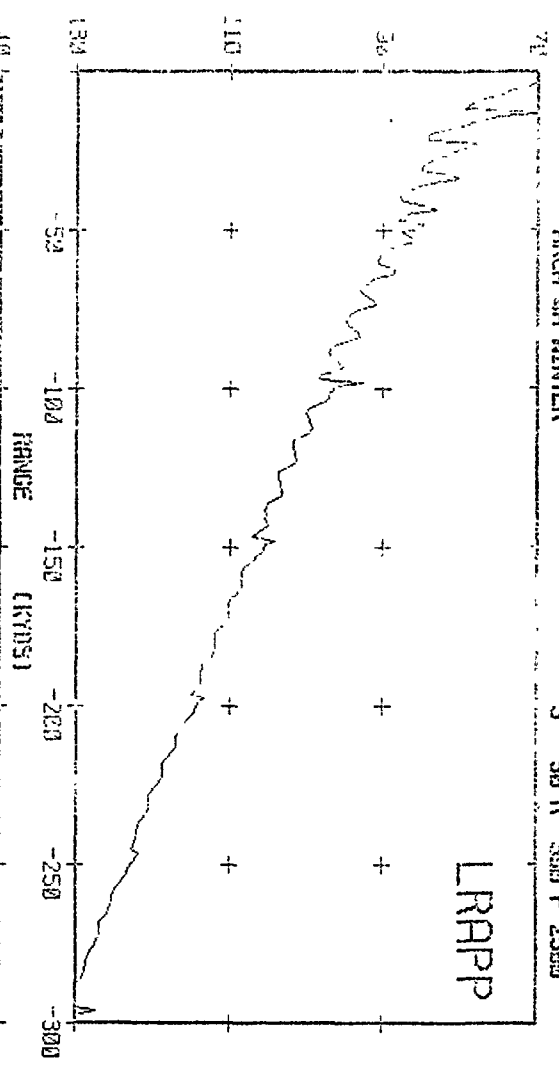


AREA 48 HINTER

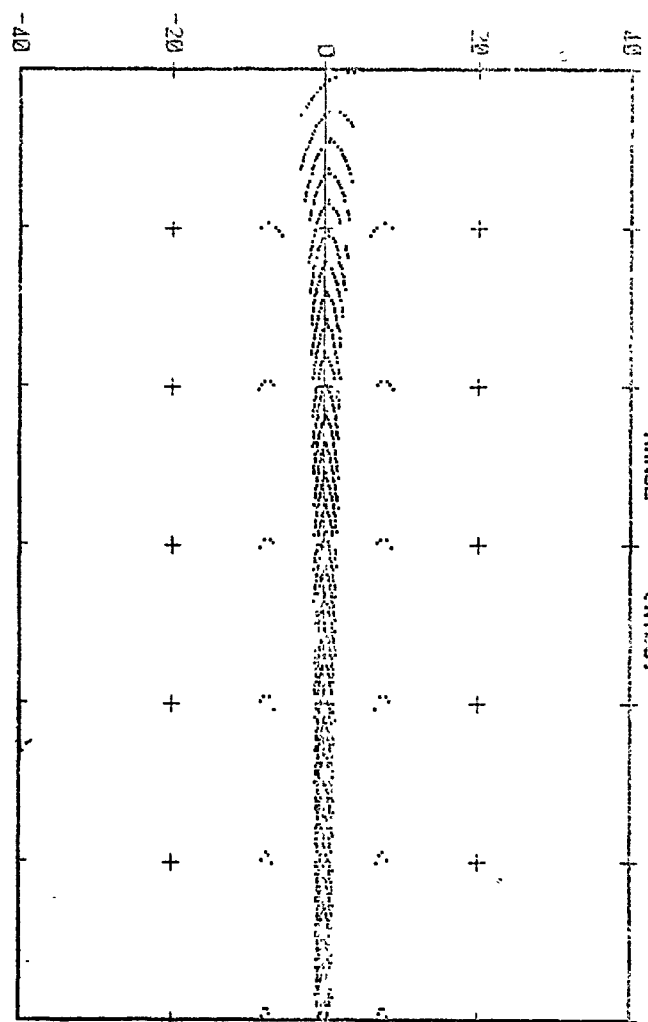
S 50 R 300 F 2500

1450 M/S 1500 1550

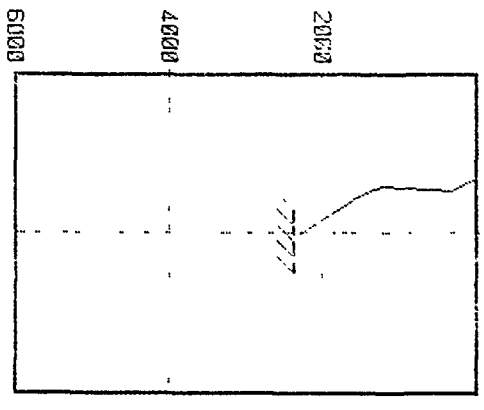
DB LOSS



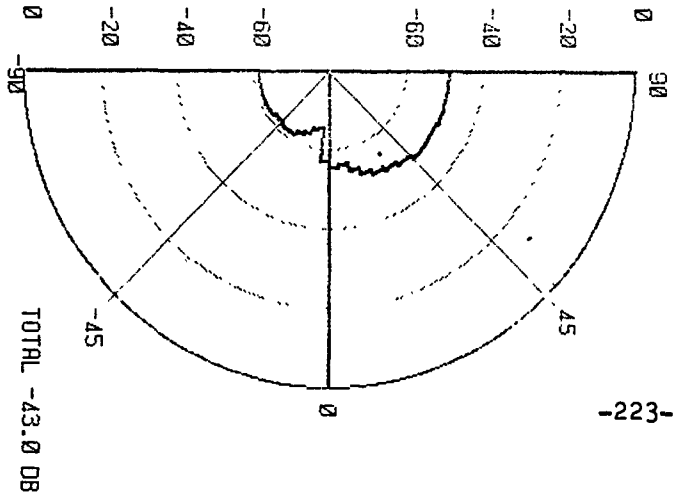
ARRIVAL ANGLE



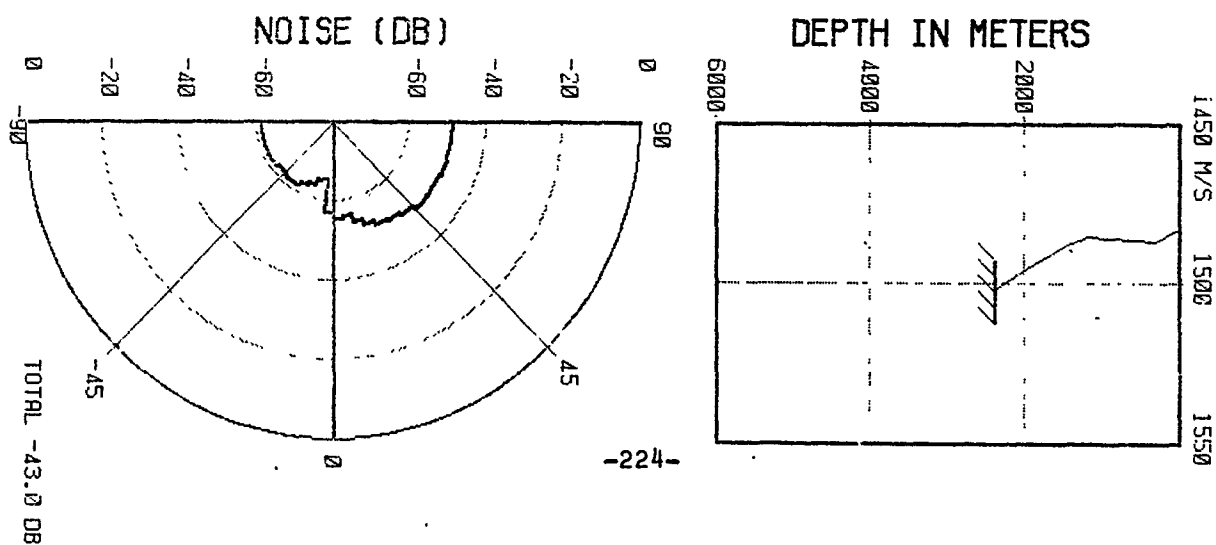
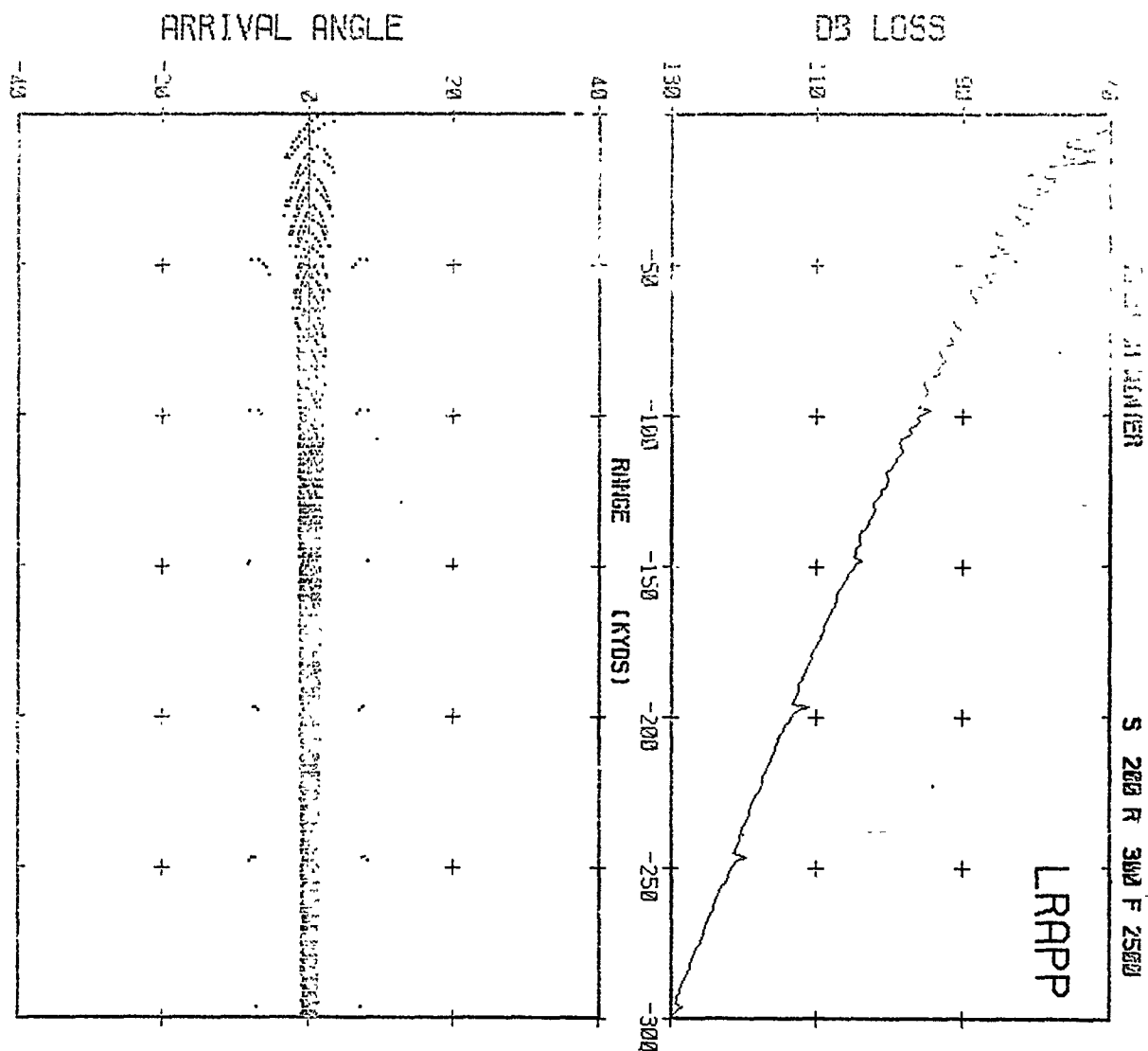
DEPTH IN METERS



NOISE (DB)



TOTAL -43.0 DB

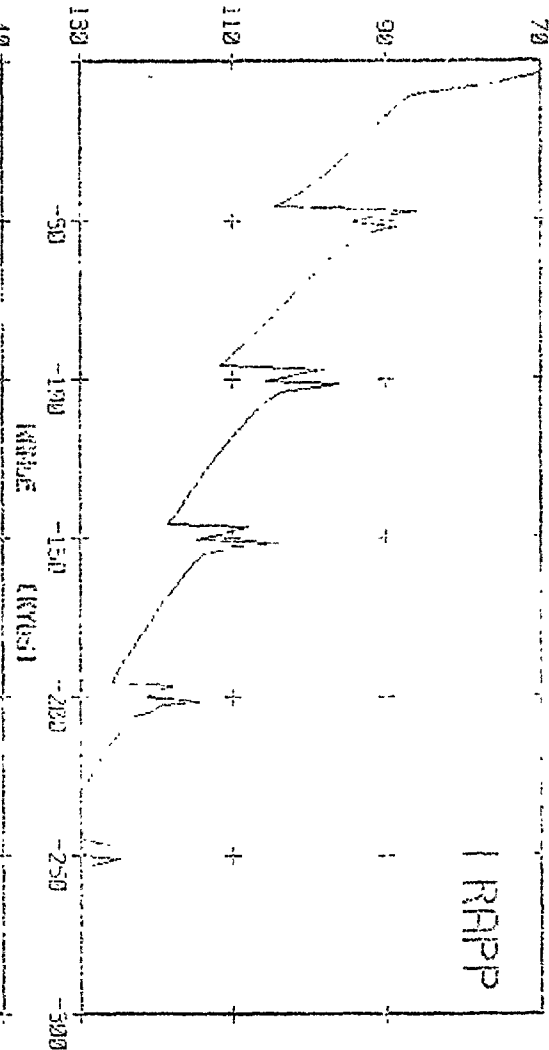


FREE AIR WINTER

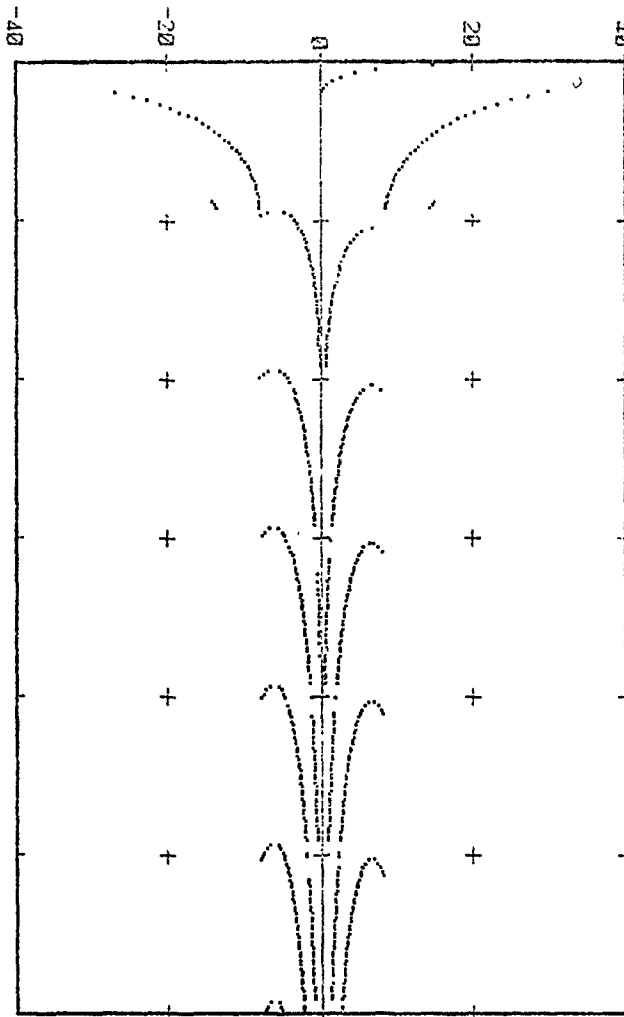
S 24 N 15.50 F 2585

1450 M/S 1500 1550

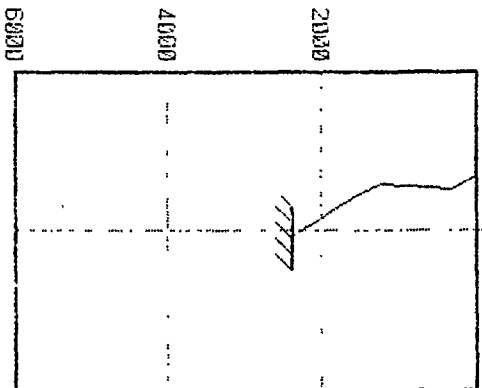
DB LOSS



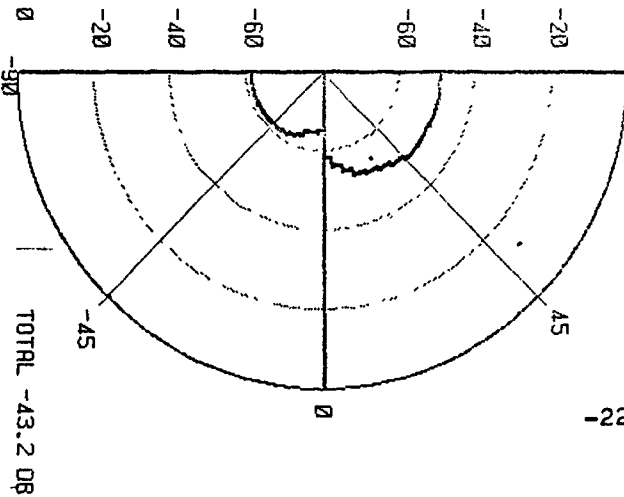
ARRIVAL ANGLE

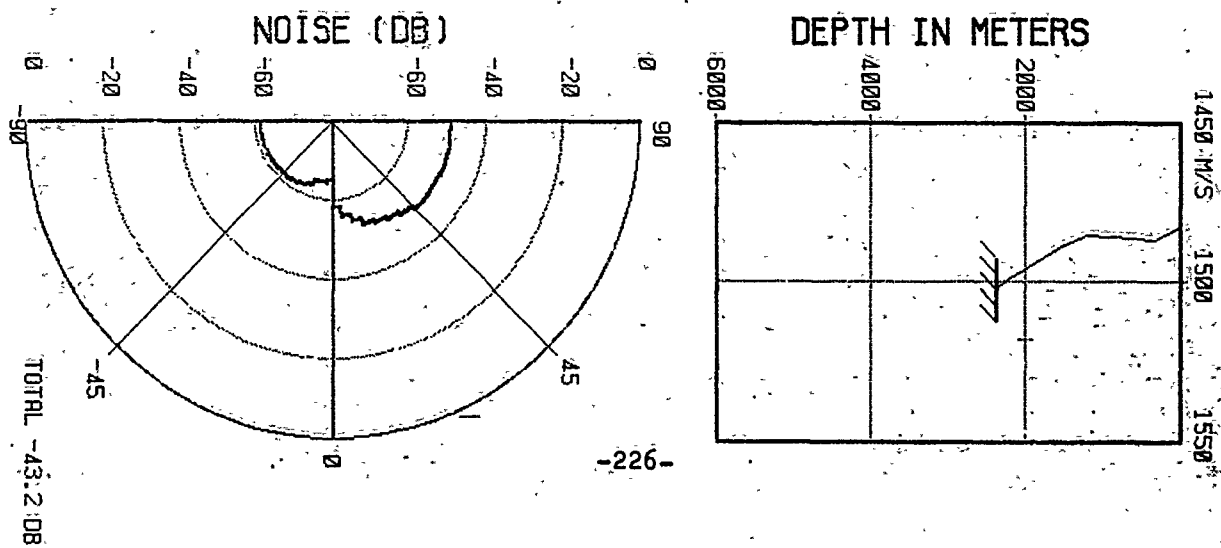
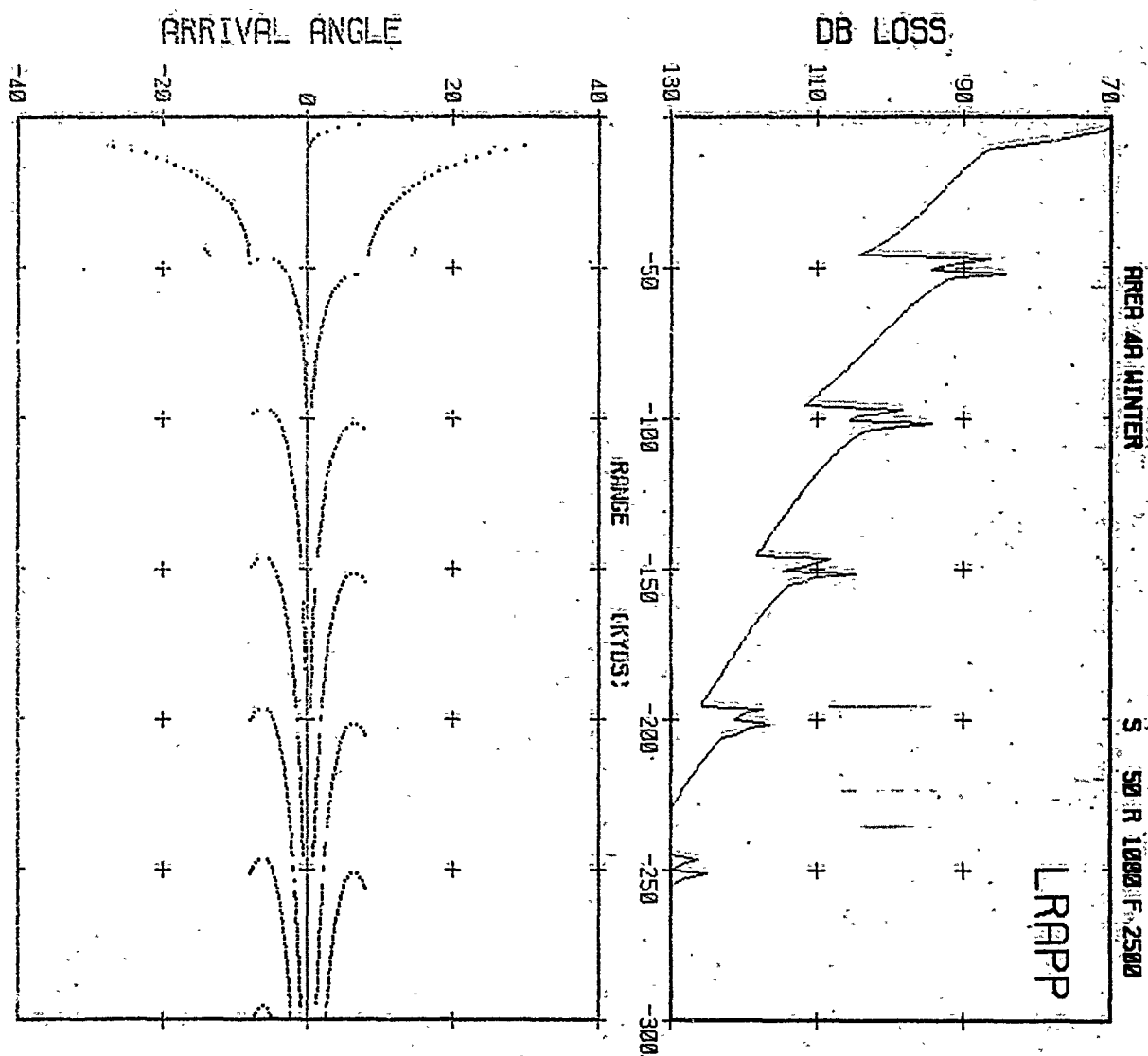


DEPTH IN METERS



NOISE (DB)



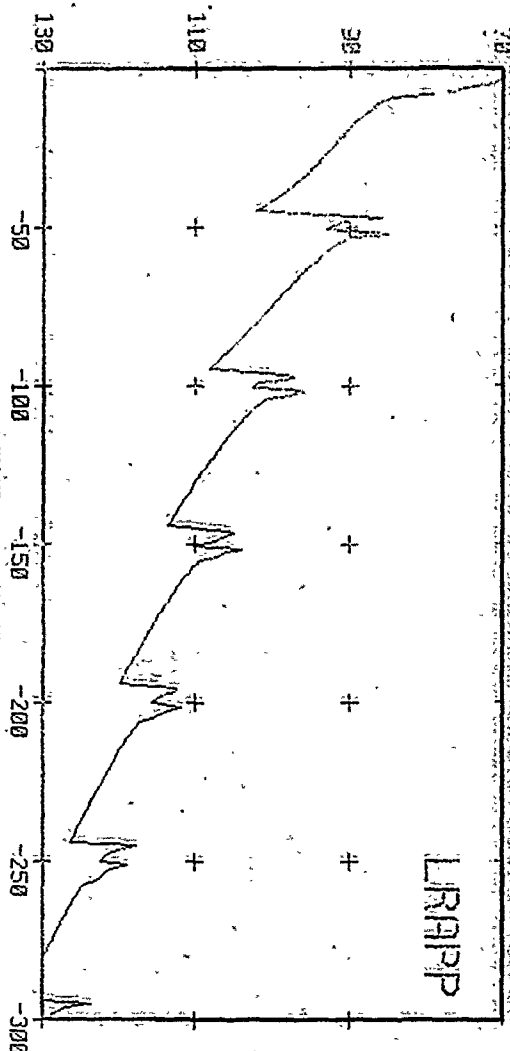


PREP 40 HUNTER

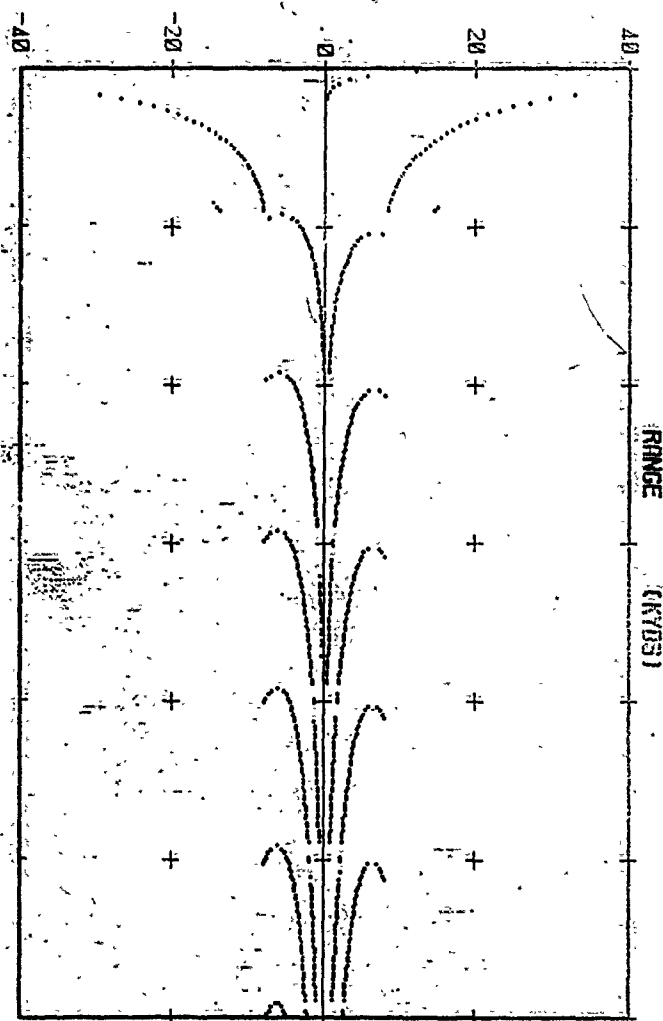
S 200 R 1000 F 2000

1450 H/S 1500 1550

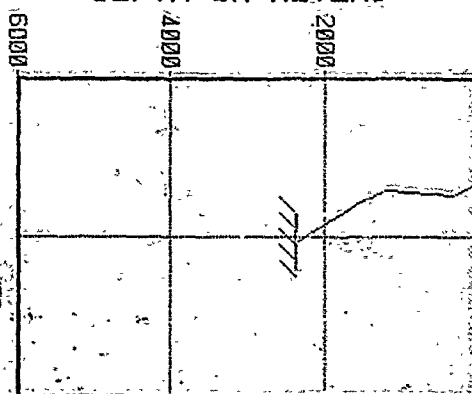
DB LOSS



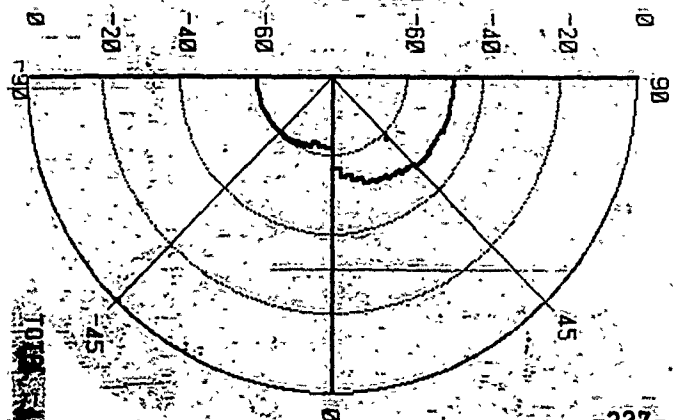
ARRIVAL ANGLE

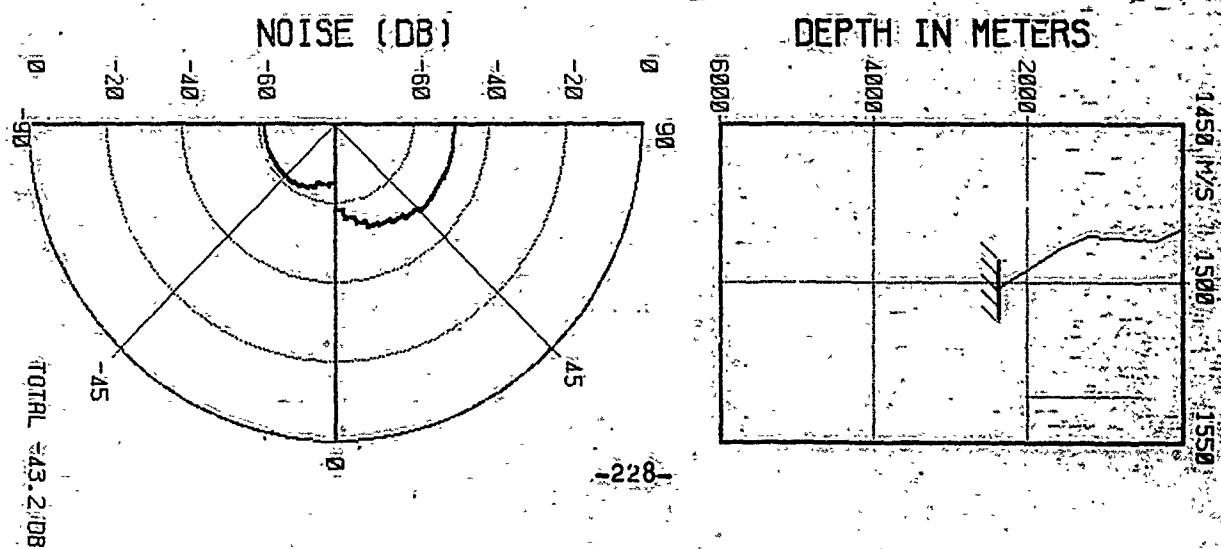
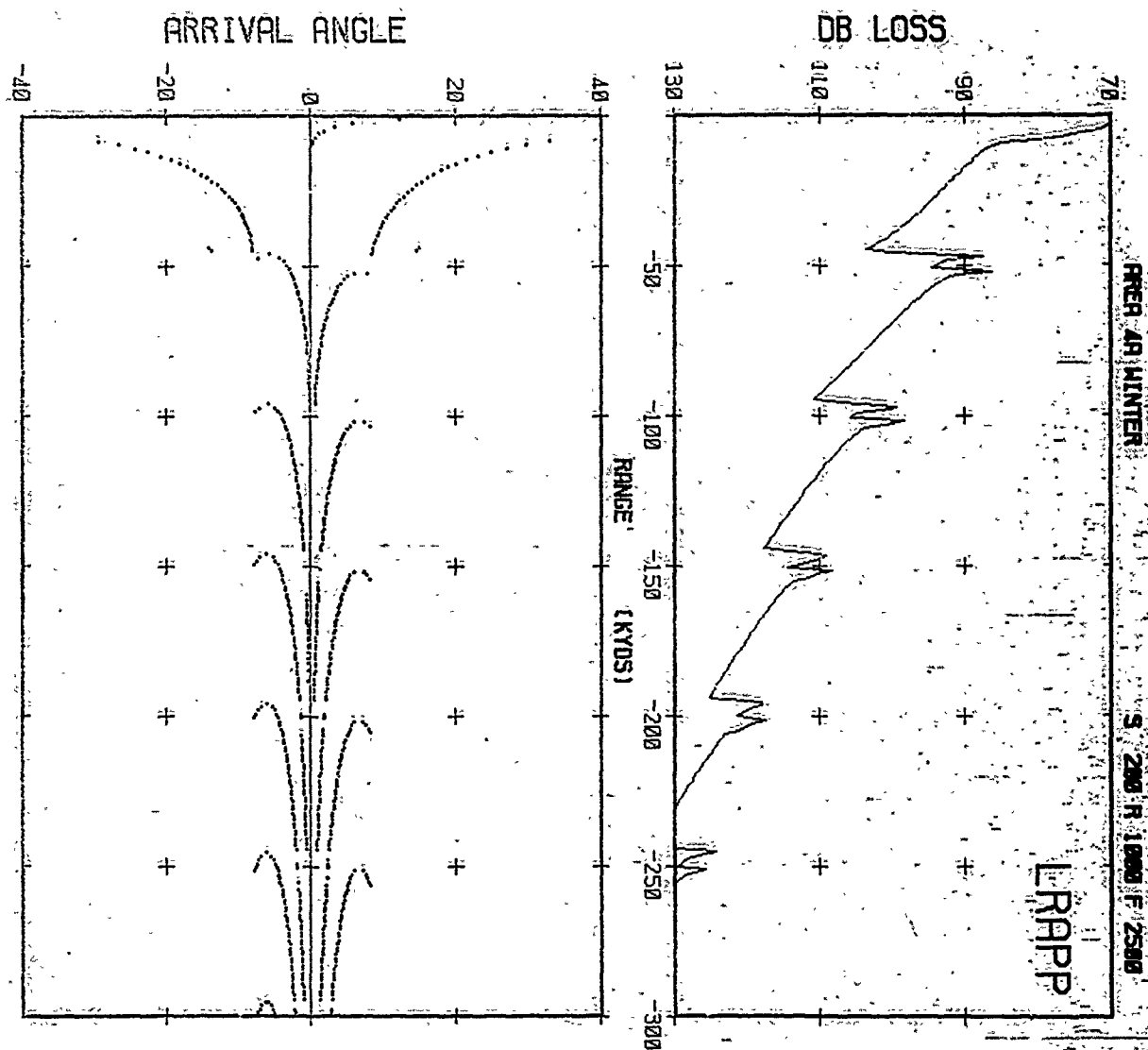


DEPTH IN METERS



NOISE (DB)





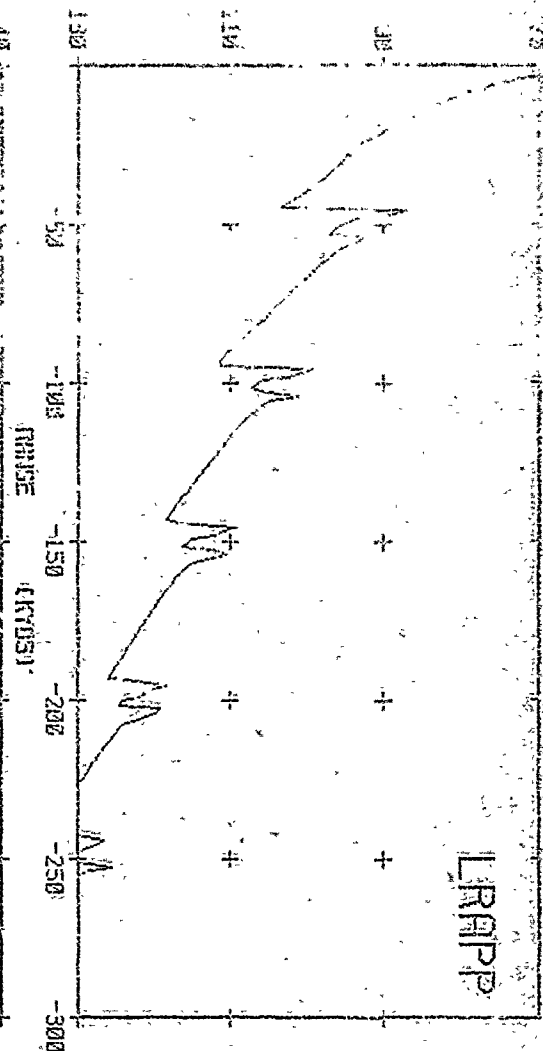
GREEN JAN WINTER

S 120 R 1500 F 2500

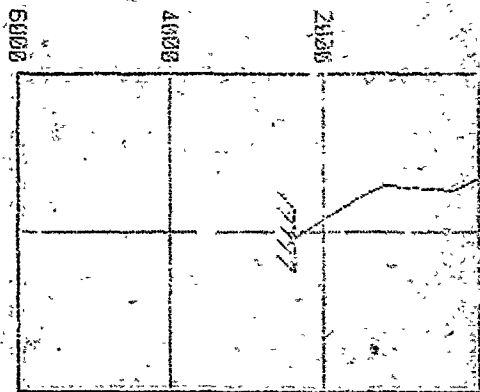
14 30 (14.5) 1500 1550

DE L035

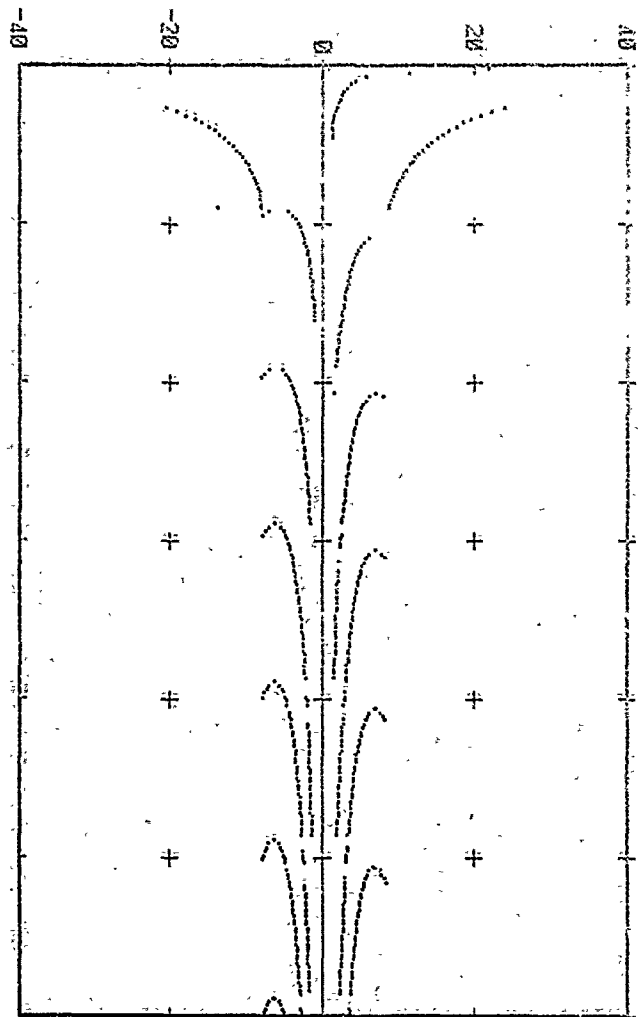
LRAPP



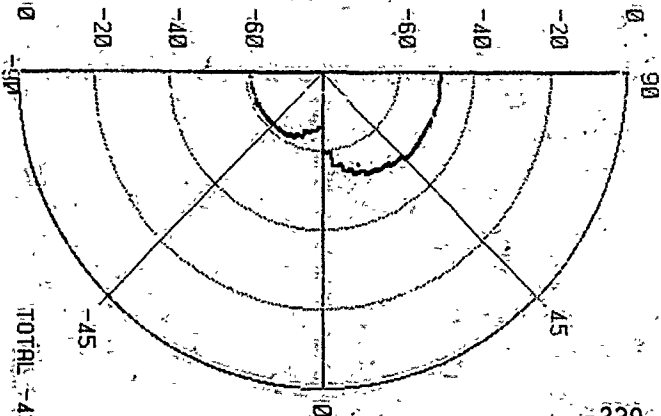
DEPTH IN METERS



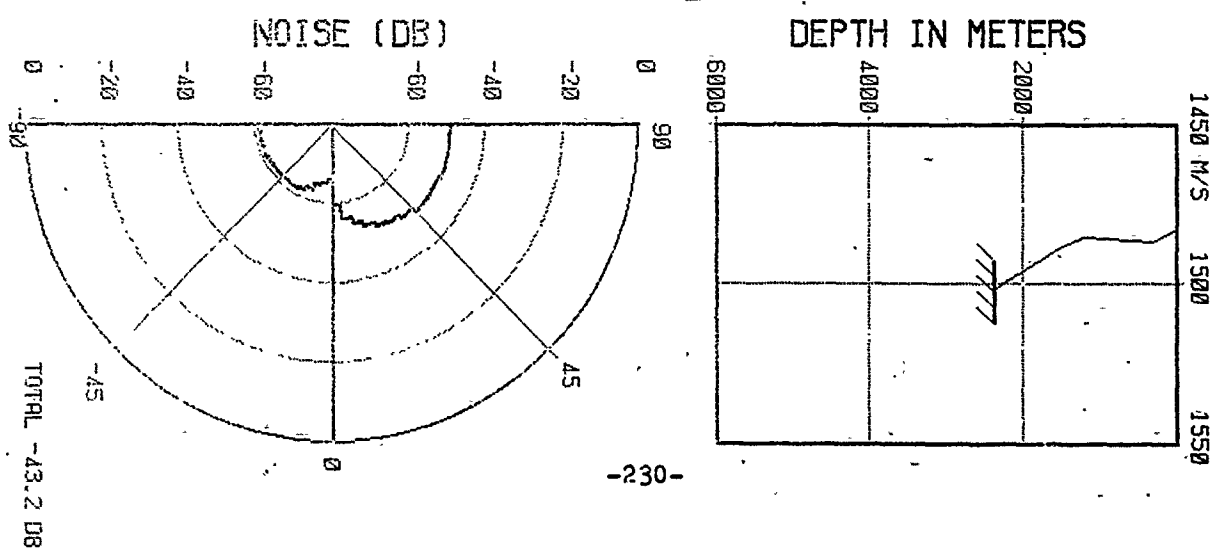
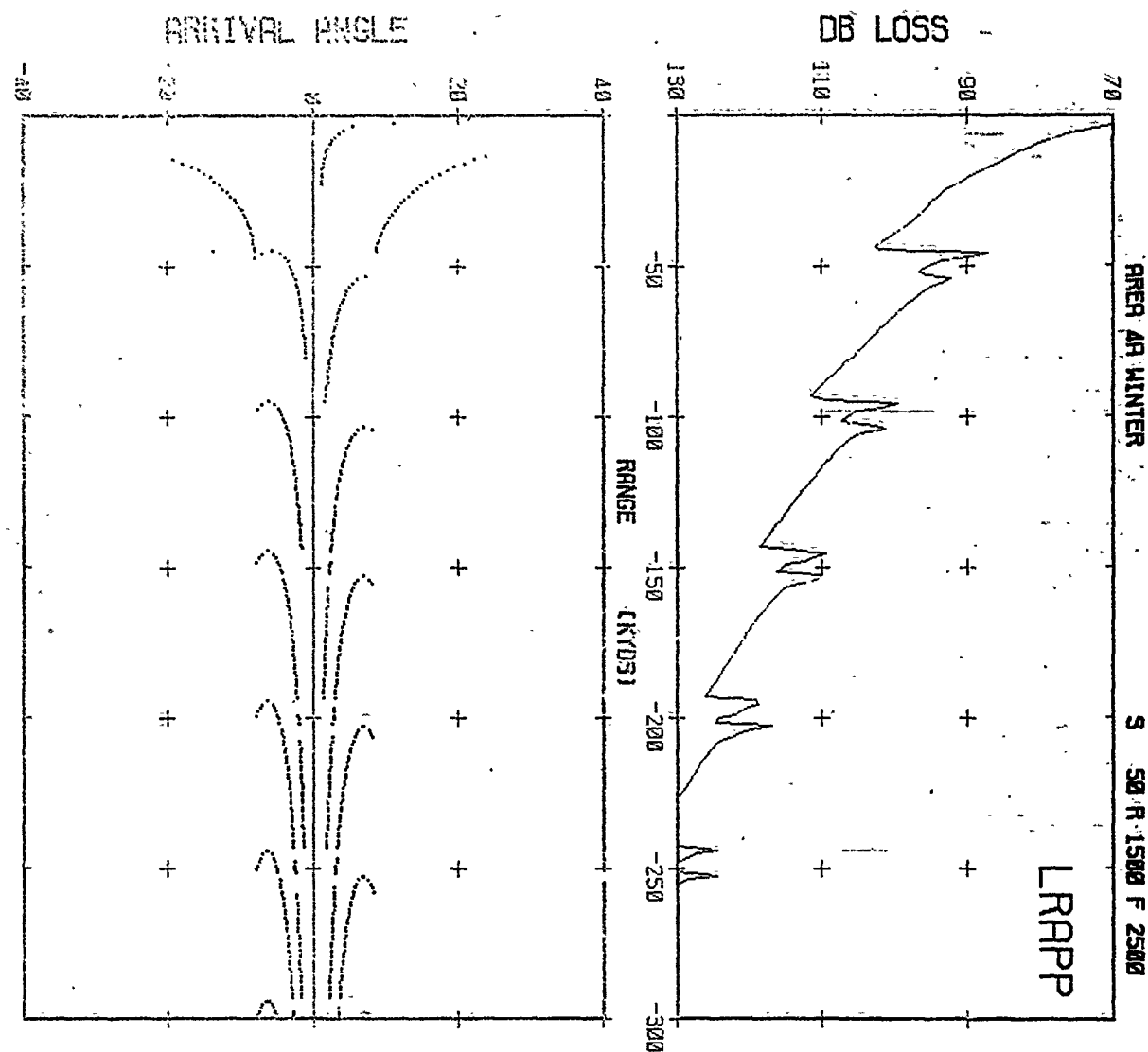
ARRIVAL ANGLE



NOISE (DB)



TOTAL -43.2 DB



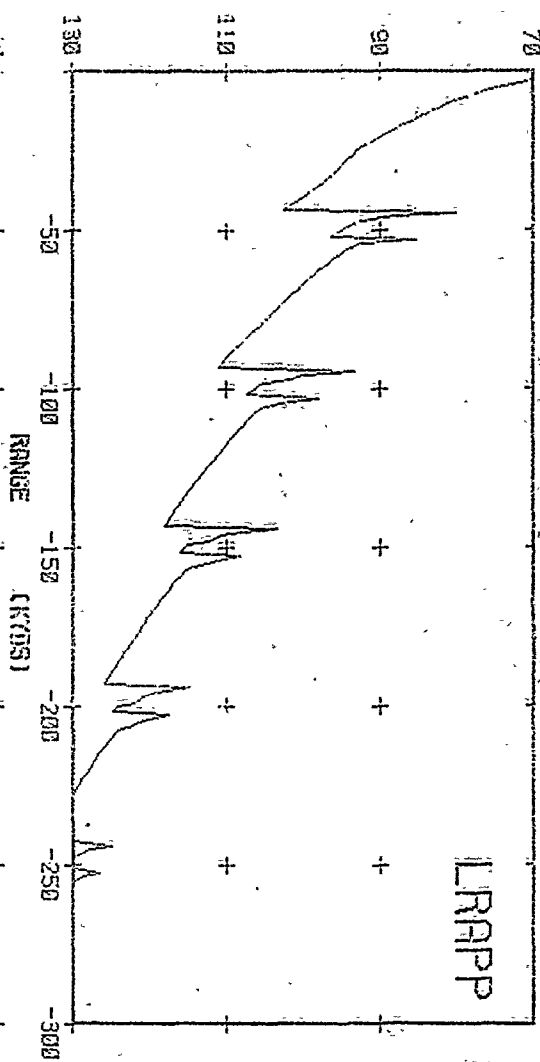
PIPER 491 HUNTER

S 260 IR 1500 F 2500

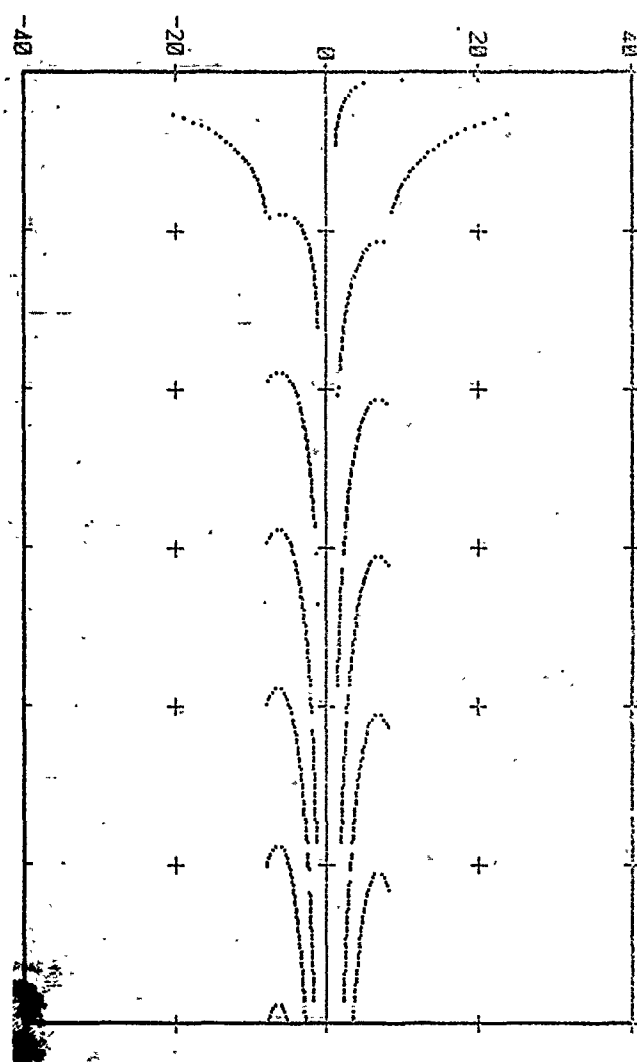
1450 M/S 1500

1550

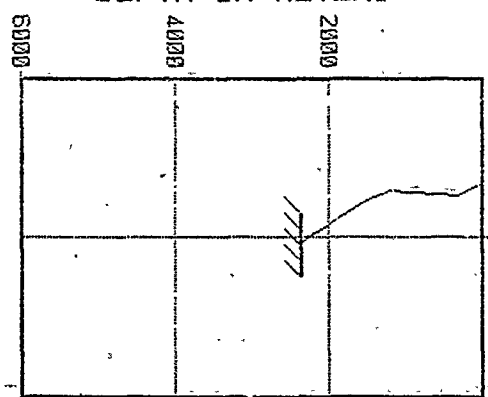
DB LOSS



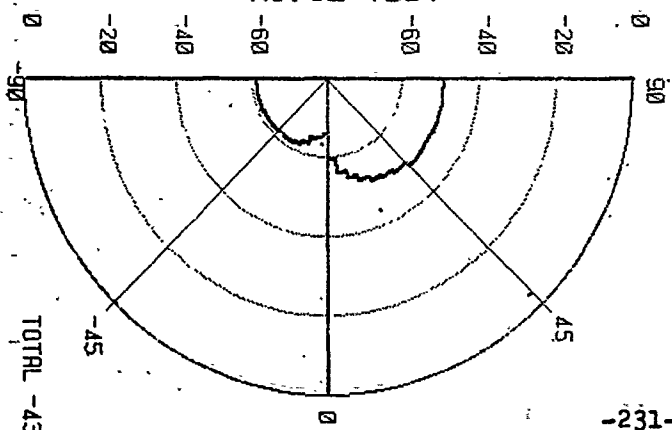
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -43.2 DB

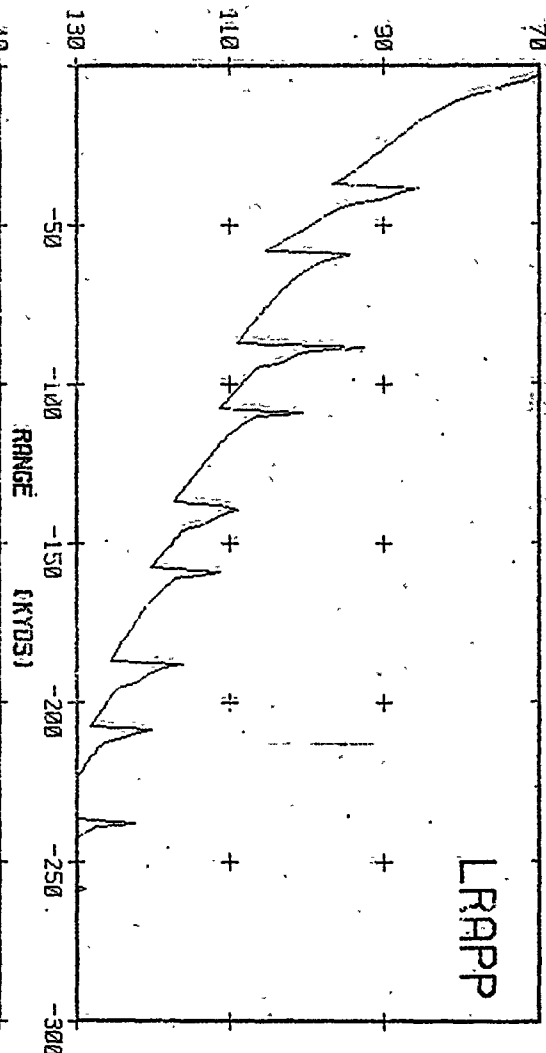
-231-

AREA 49 WINTER

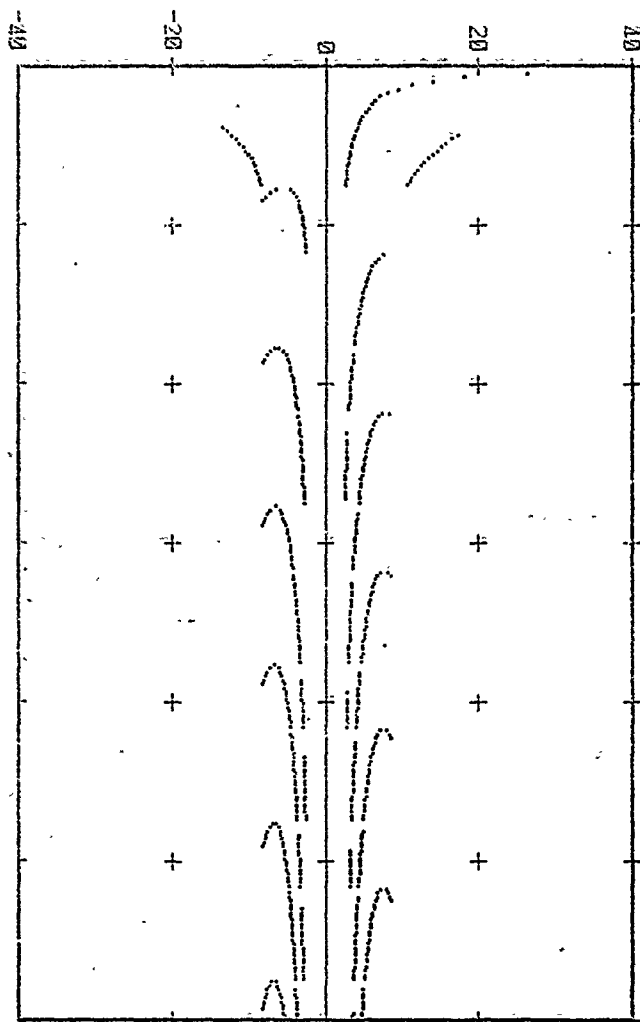
S 20 R 3609 F 2500

LRAPP

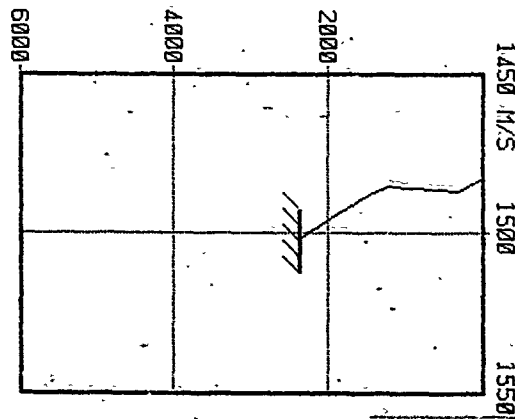
DB LOSS



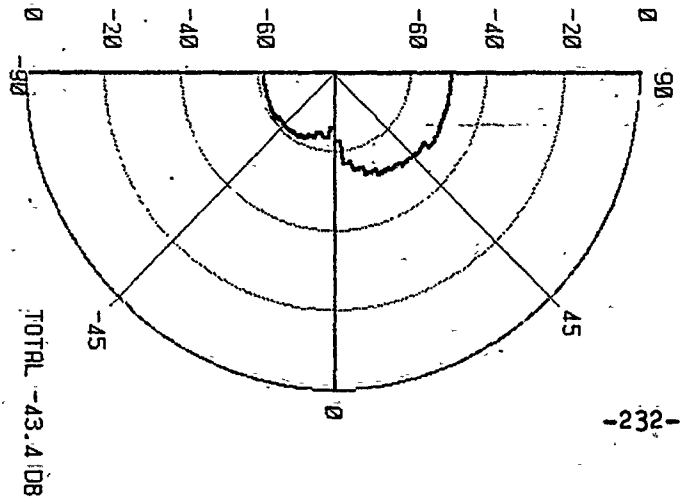
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



-232-

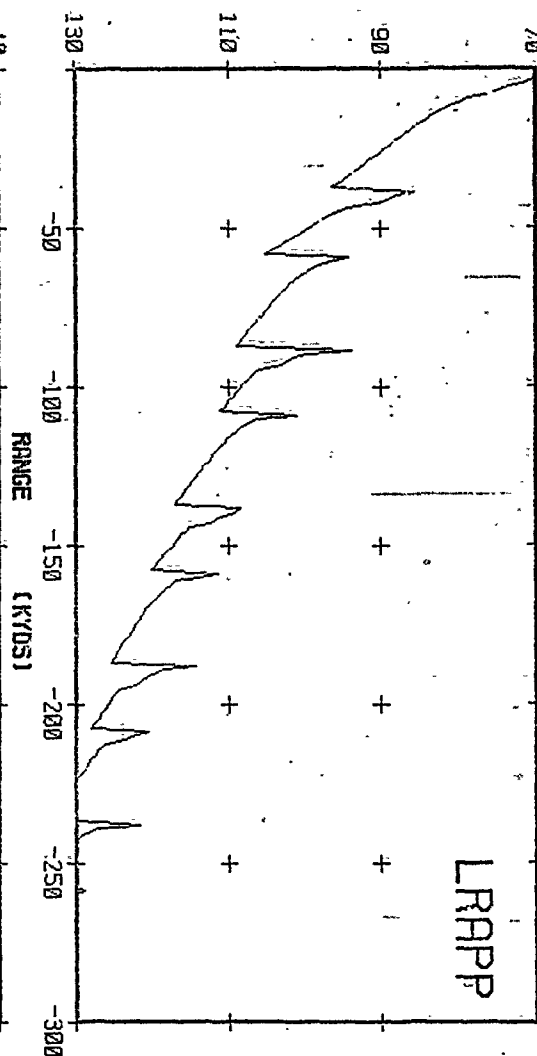
AREA 44 WINTER

S 50 R 3609 F 2500

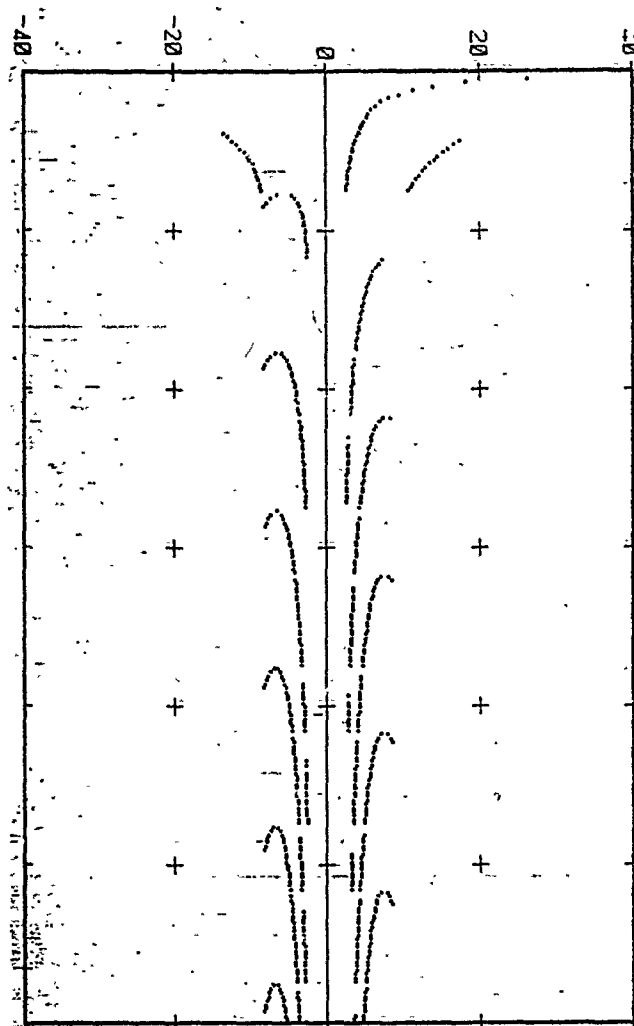
1450 M/S 1500 1550

LRAPP

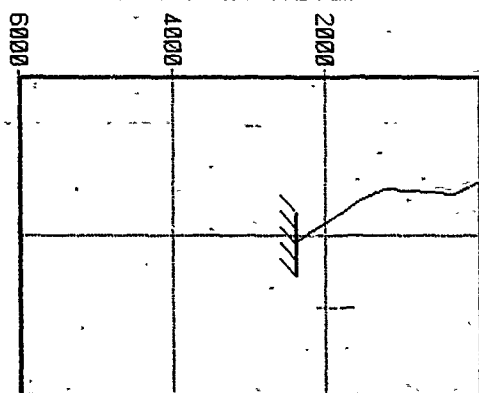
DB LOSS



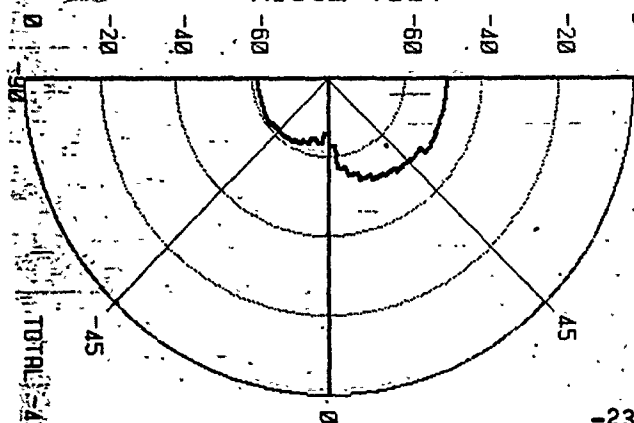
ARRIVAL ANGLE



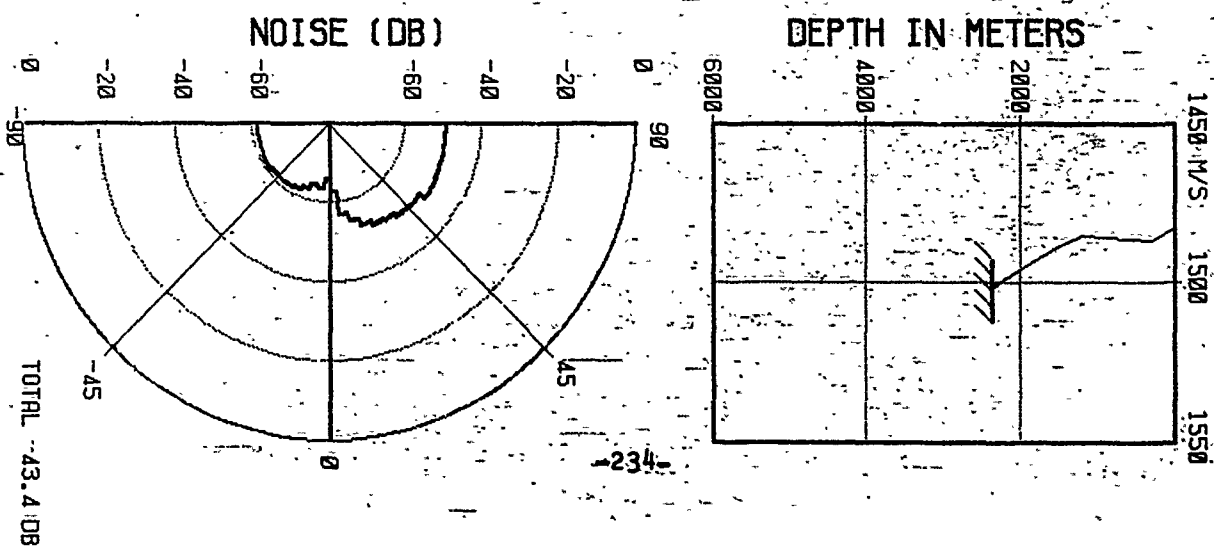
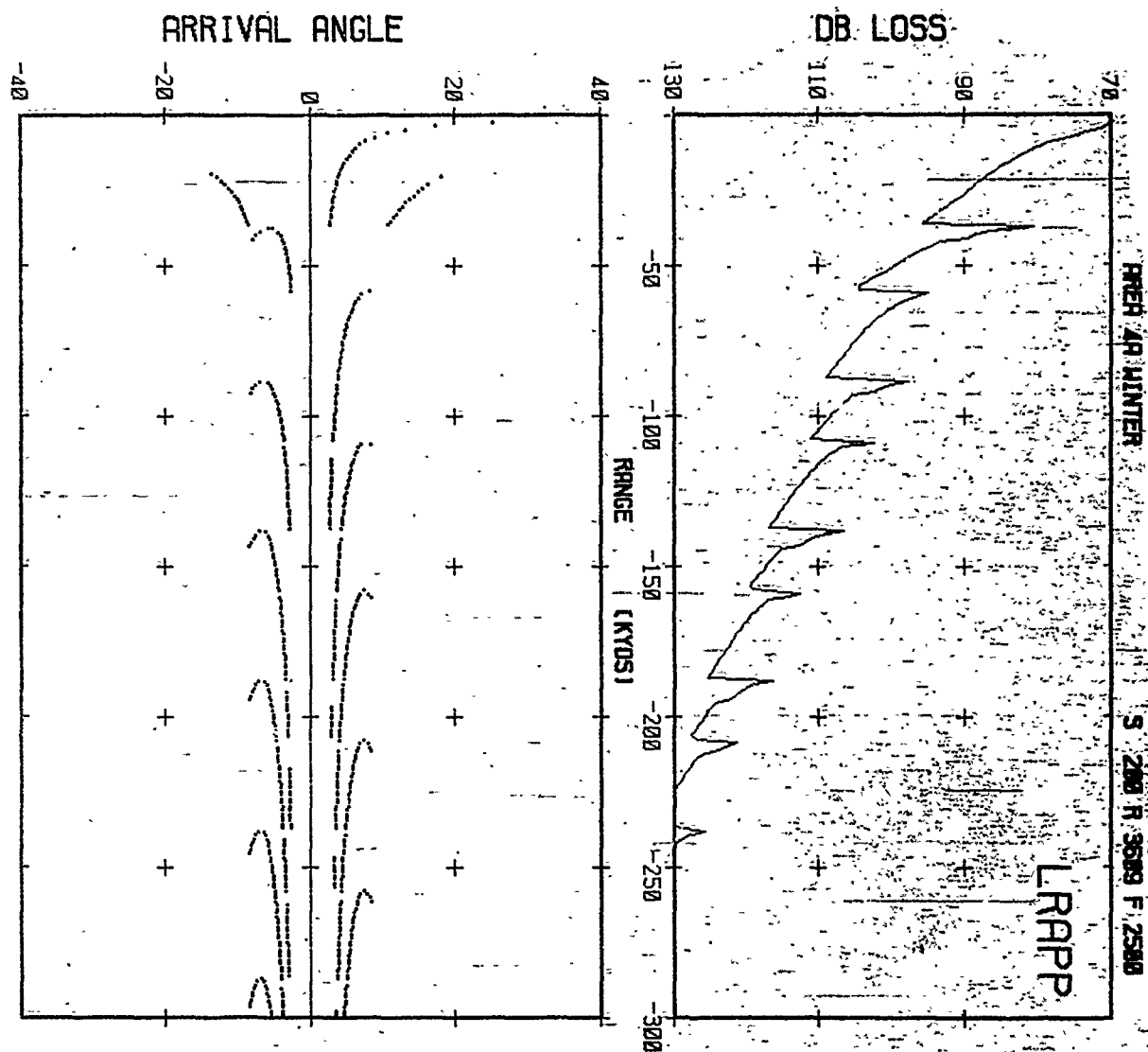
DEPTH IN METERS

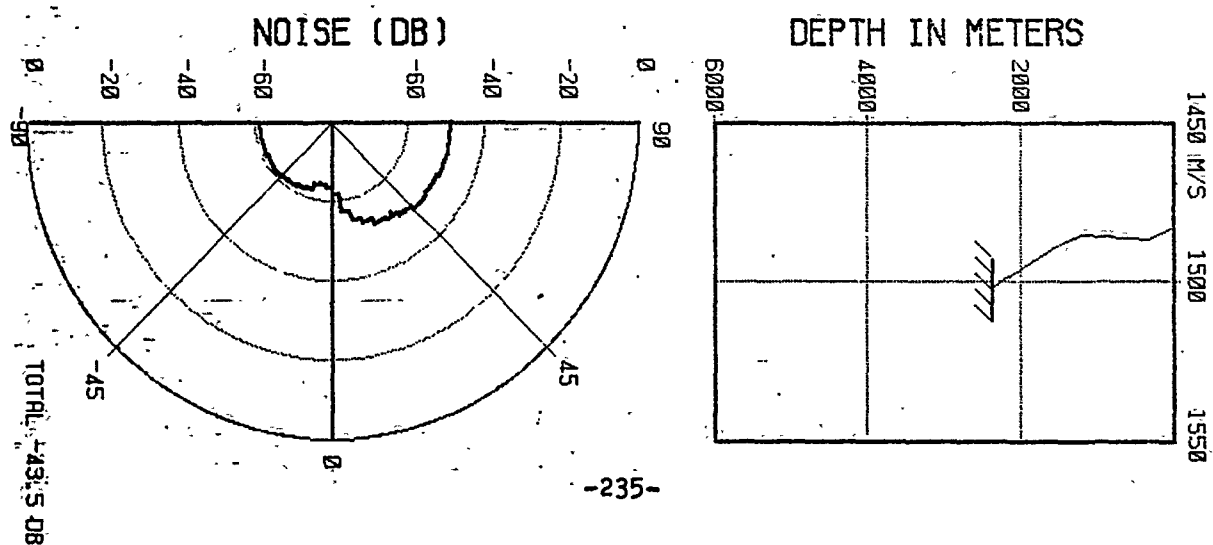
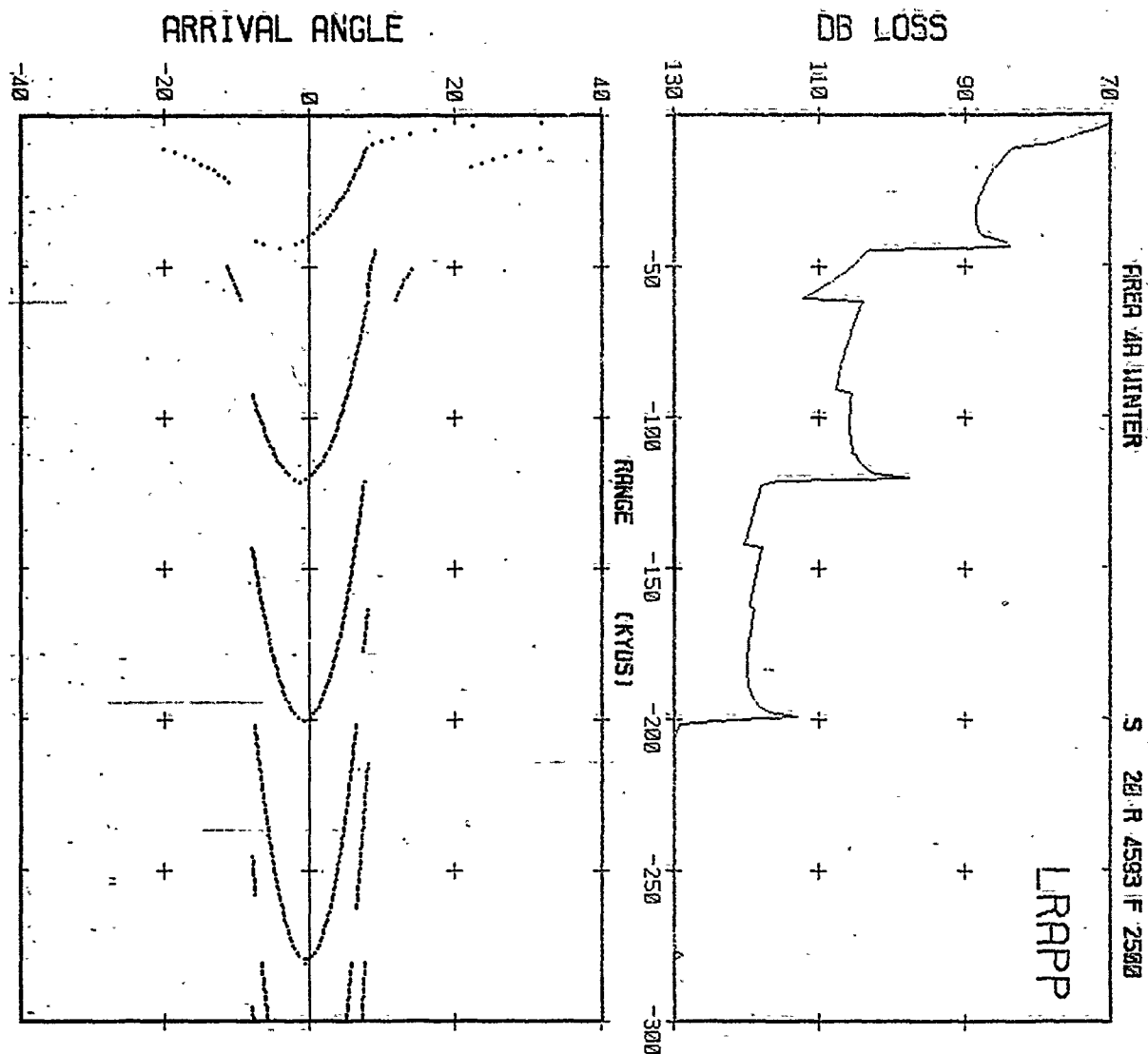


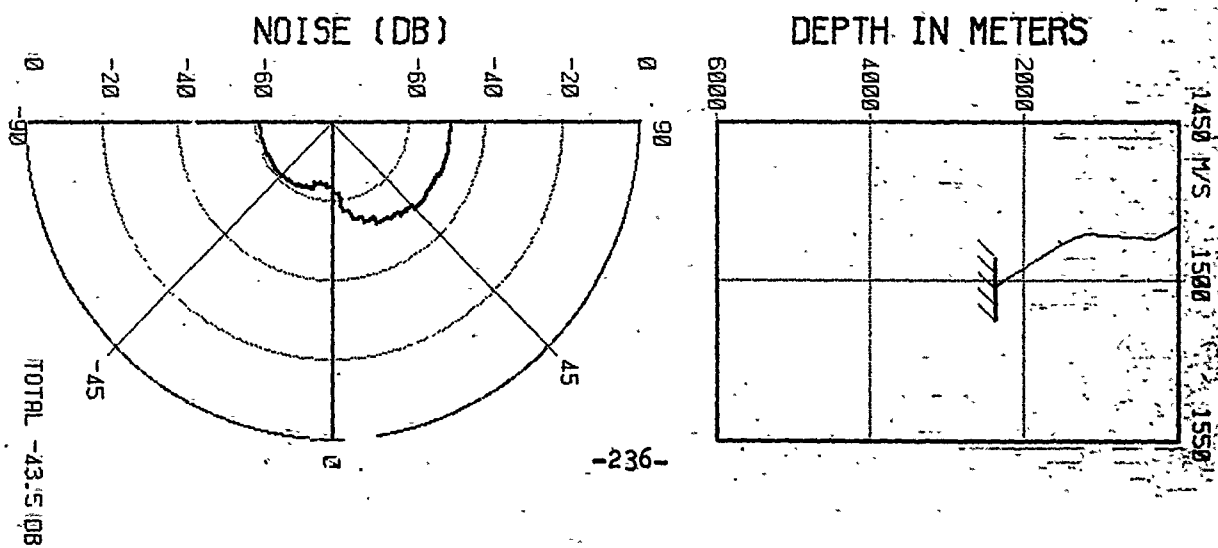
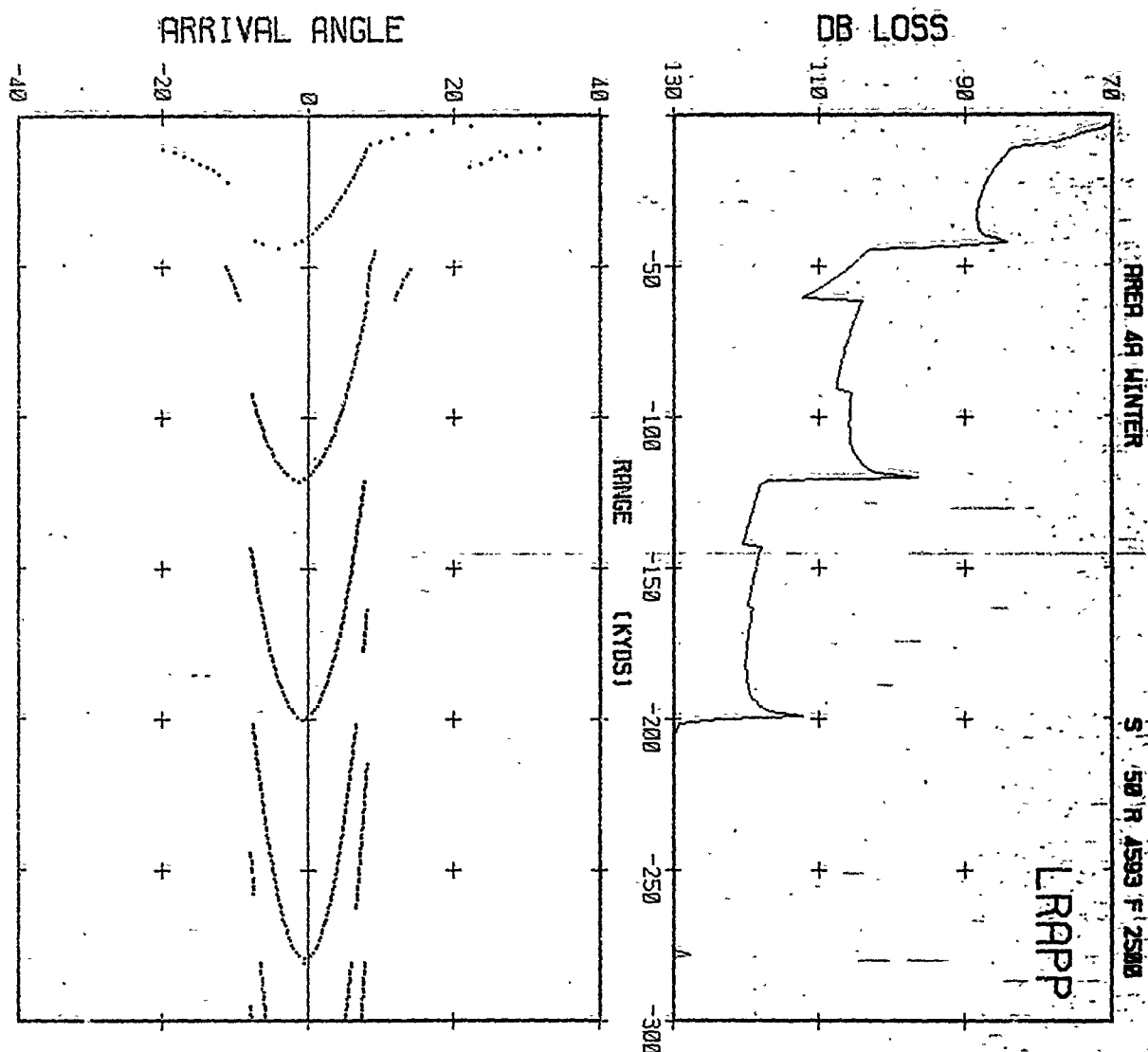
NOISE (DB)

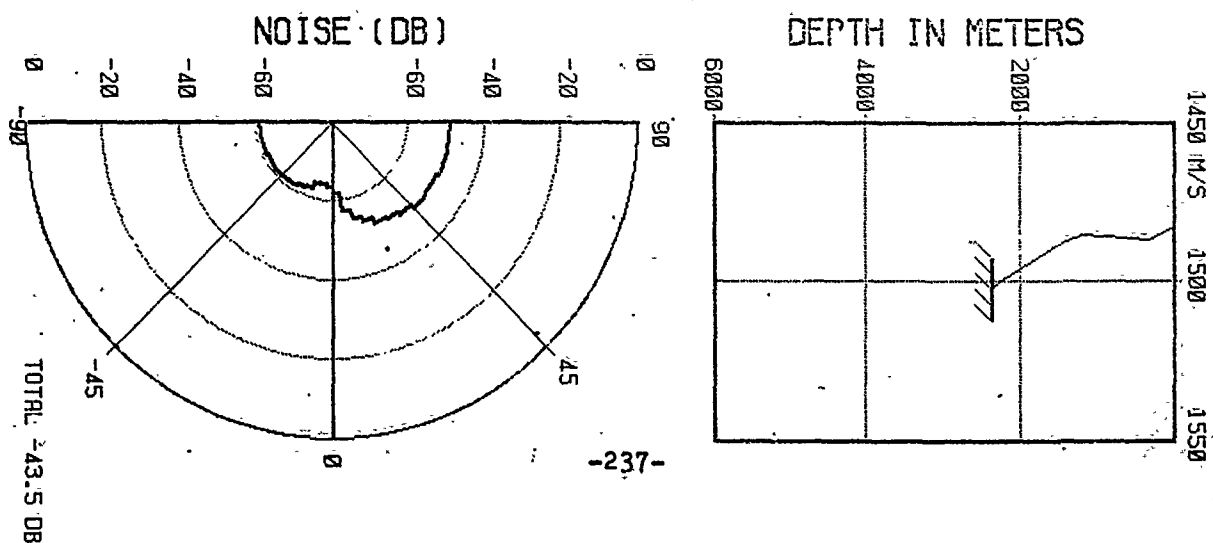
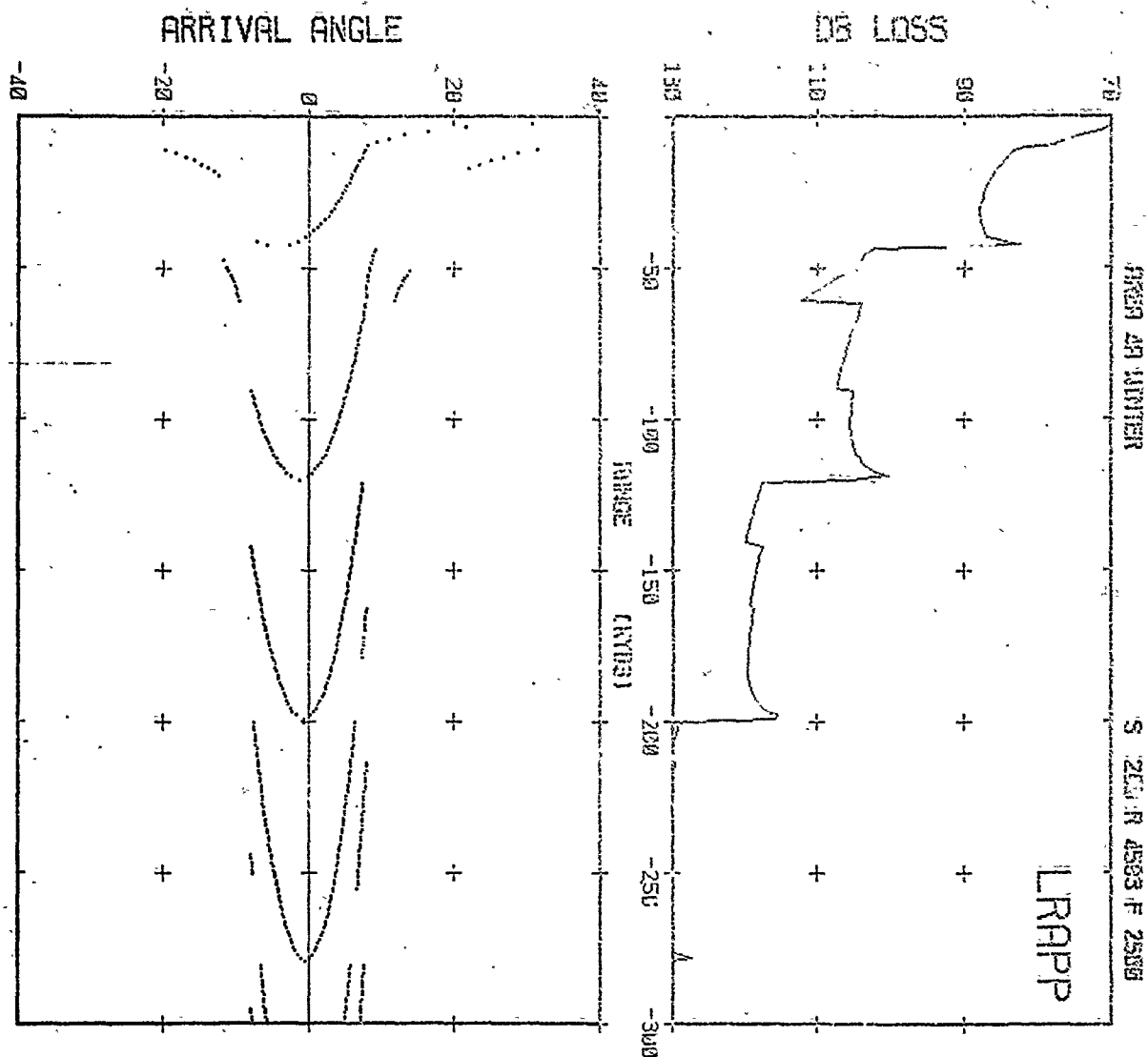


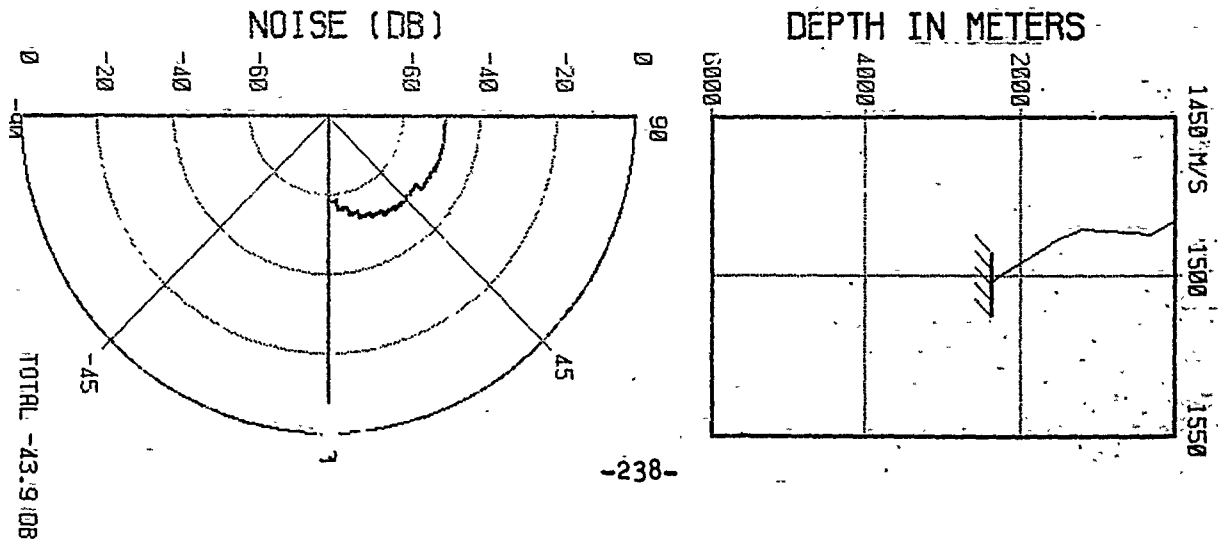
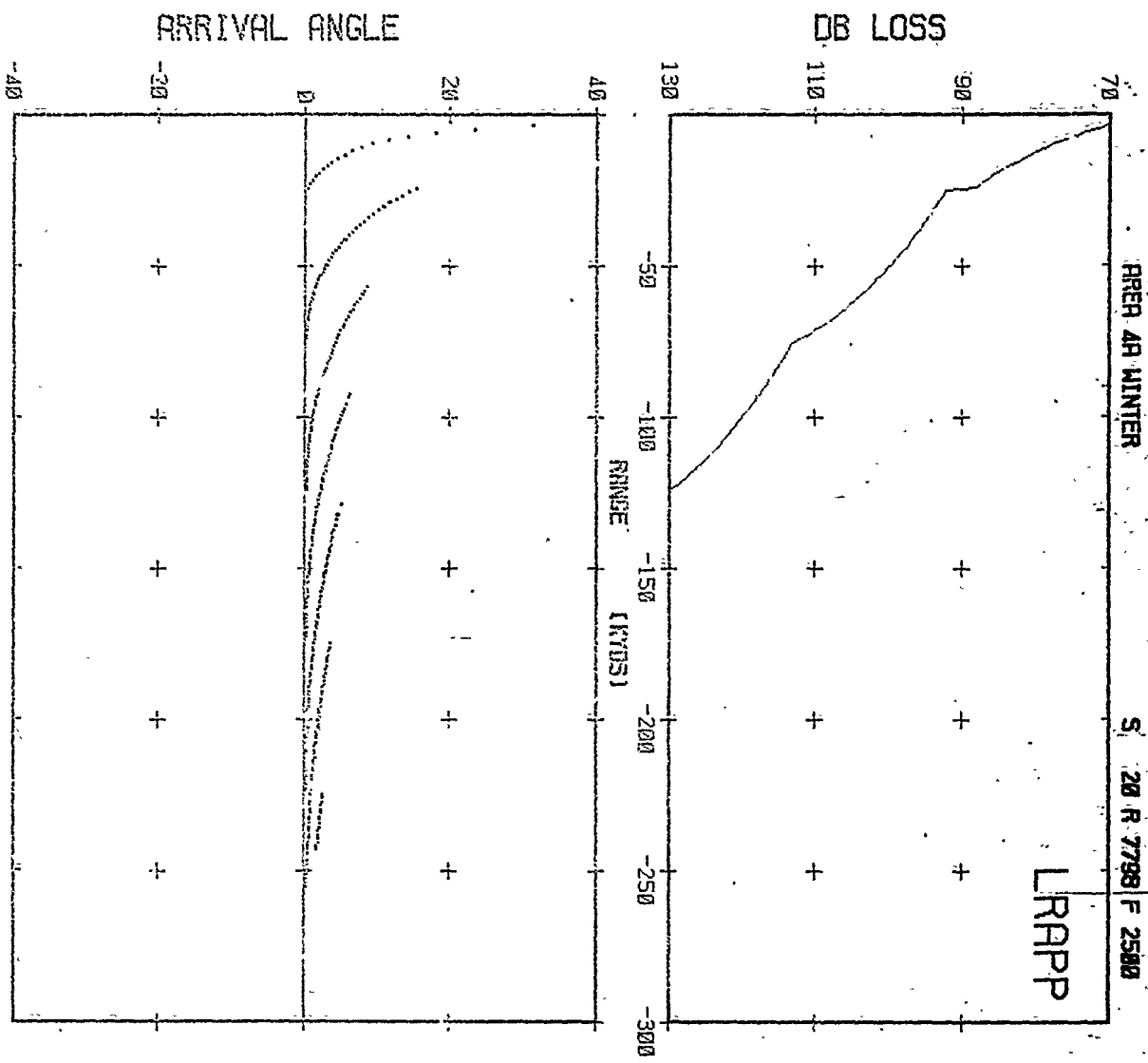
TOTAL 43.2 DB

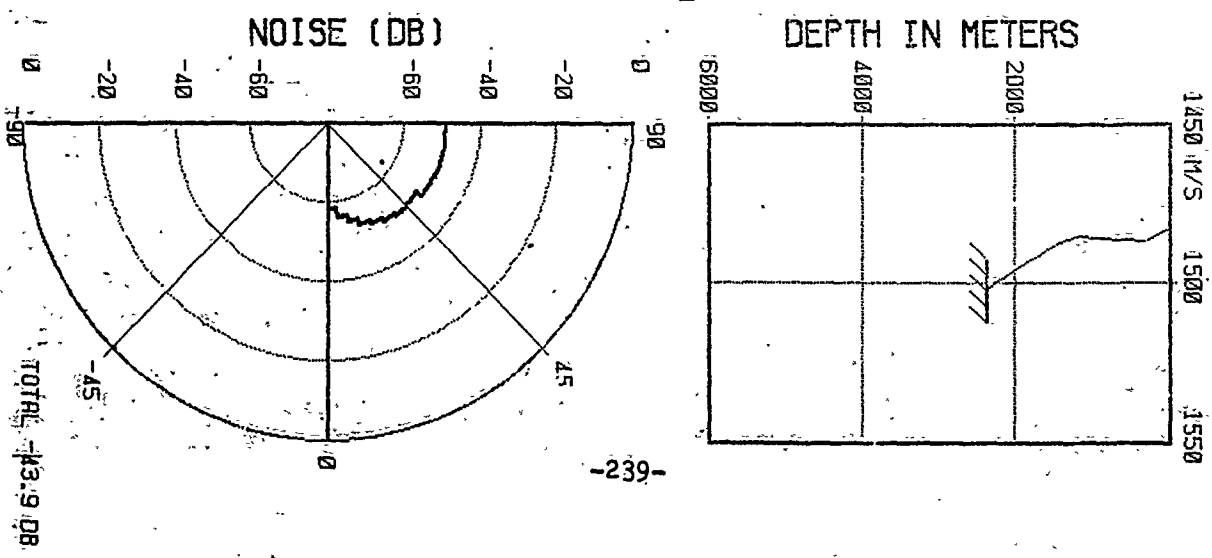
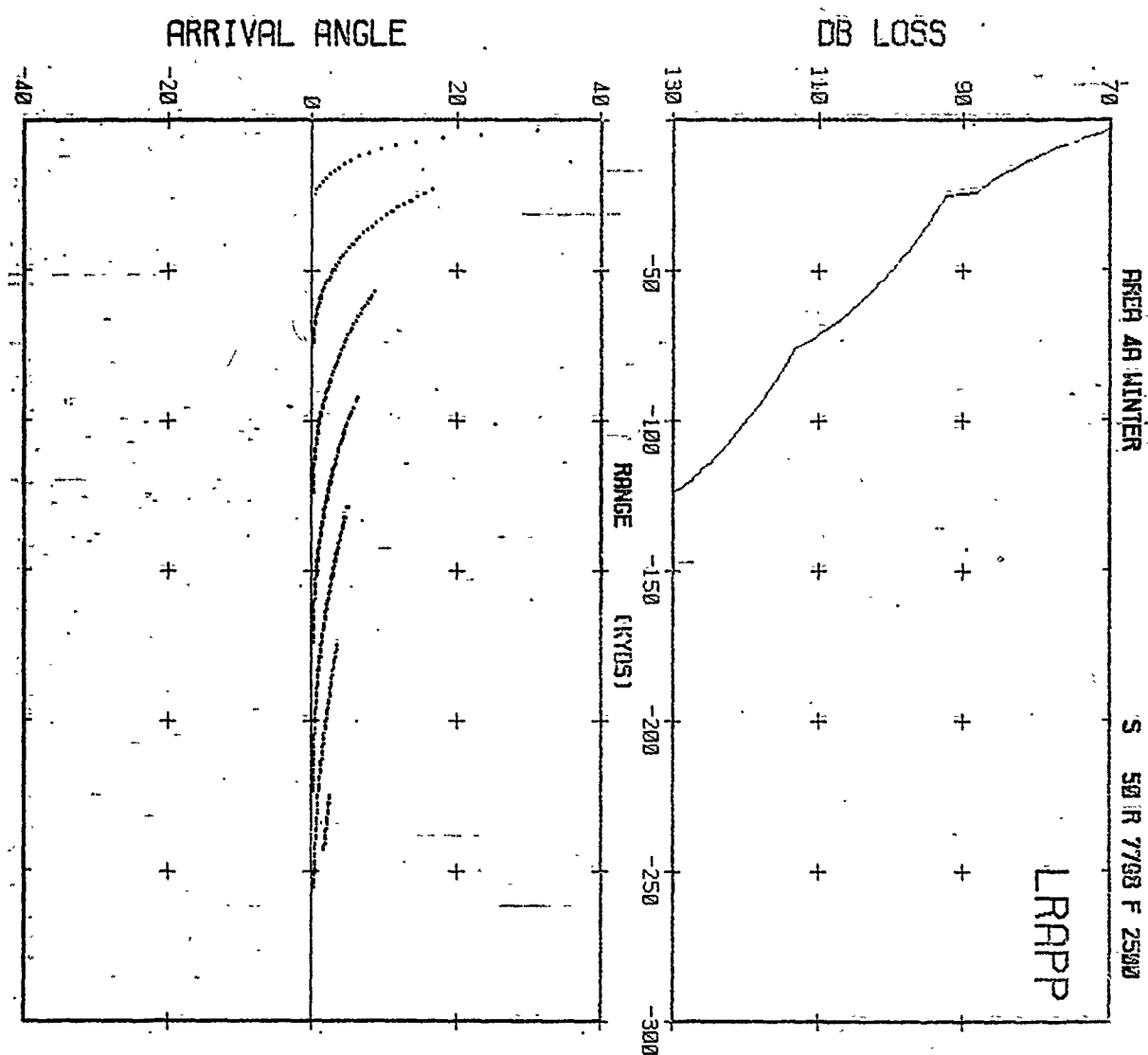










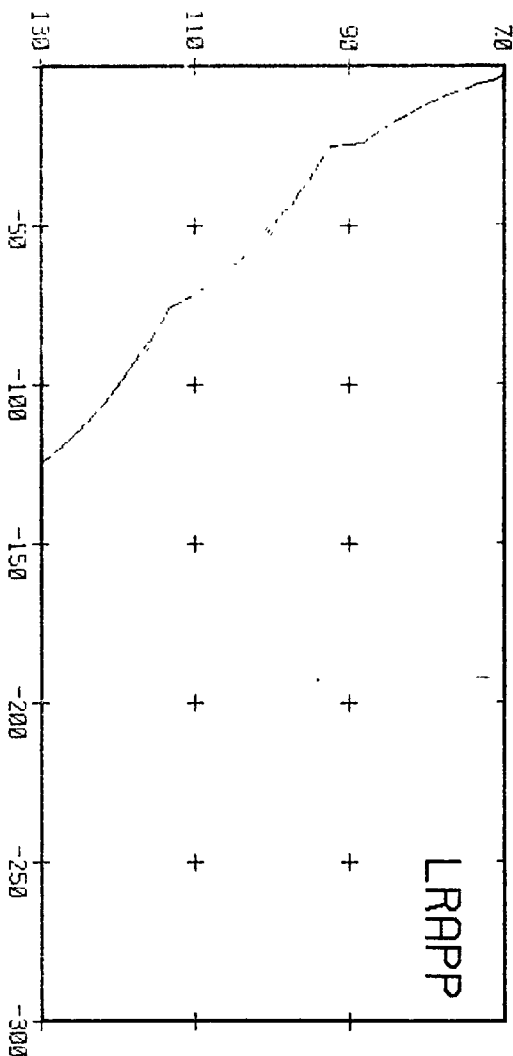


GREEN AR WINTER

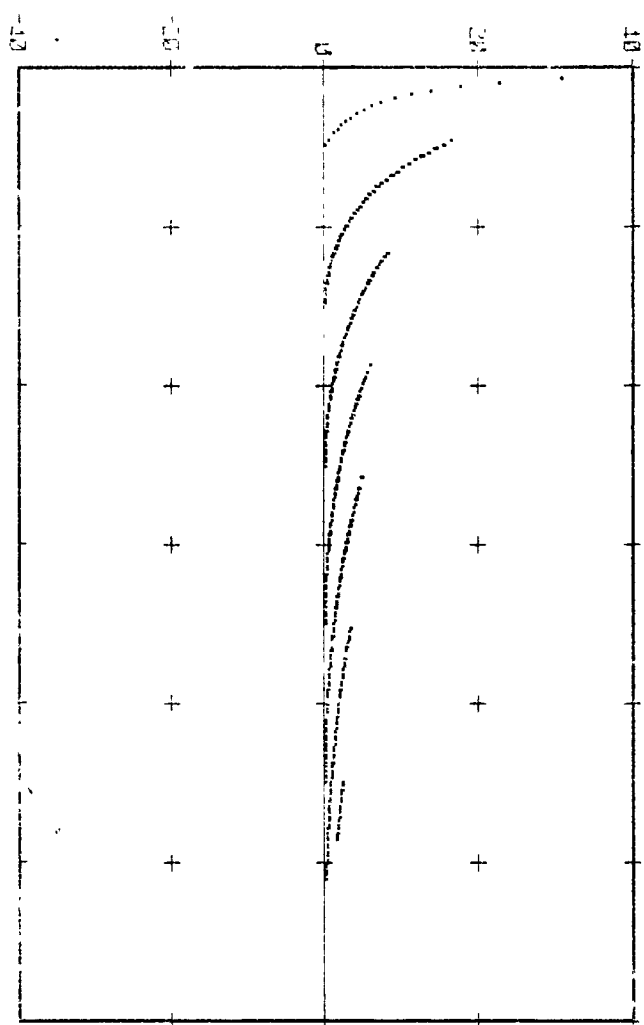
S 200 R 7798 F 2500

1450 M/S 1500

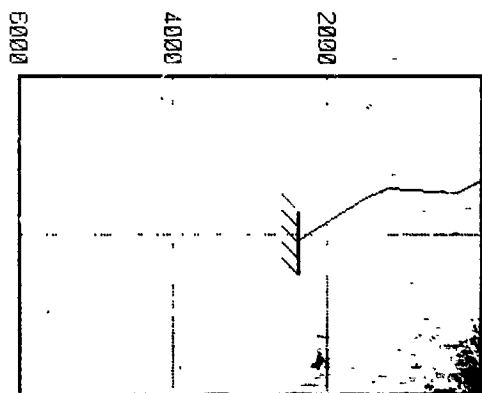
DB LOSS



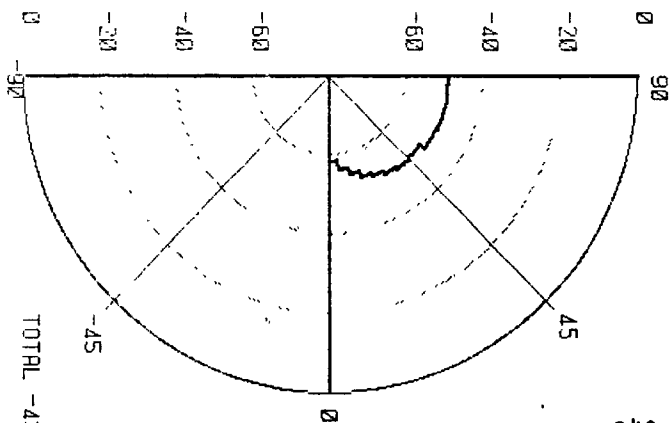
ARRIVAL ANGLE



DEPTH IN METERS



NOISE (DB)



TOTAL -43.9 DB



DEPARTMENT OF THE NAVY

OFFICE OF NAVAL RESEARCH
875 NORTH RANDOLPH STREET
SUITE 1425
ARLINGTON VA 22203-1995

IN REPLY REFER TO:

5510/1
Ser 321OA/011/06
31 Jan 06

MEMORANDUM FOR DISTRIBUTION LIST

Subj: DECLASSIFICATION OF LONG RANGE ACOUSTIC PROPAGATION PROJECT (LRAPP) DOCUMENTS

Ref: (a) SECNAVINST 5510.36

Encl: (1) List of DECLASSIFIED LRAPP Documents

1. In accordance with reference (a), a declassification review has been conducted on a number of classified LRAPP documents.
2. The LRAPP documents listed in enclosure (1) have been downgraded to UNCLASSIFIED and have been approved for public release. These documents should be remarked as follows:

Classification changed to UNCLASSIFIED by authority of the Chief of Naval Operations (N772) letter N772A/6U875630, 20 January 2006.

DISTRIBUTION STATEMENT A: Approved for Public Release; Distribution is unlimited.

3. Questions may be directed to the undersigned on (703) 696-4619, DSN 426-4619.

BRIAN LINK
By direction

Subj: DECLASSIFICATION OF LONG RANGE ACOUSTIC PROPAGATION PROJECT
(LRAPP) DOCUMENTS

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